```
=> d his

     (FILE 'HOME' ENTERED AT 11:47:30 ON 13 MAY 2005)

     FILE 'HCAPLUS' ENTERED AT 11:48:03 ON 13 MAY 2005
L1            1 US20040225010/PN

     FILE 'REGISTRY' ENTERED AT 11:48:27 ON 13 MAY 2005

     FILE 'HCAPLUS' ENTERED AT 11:48:28 ON 13 MAY 2005
L2              TRA L1 1- RN :         4 TERMS

     FILE 'REGISTRY' ENTERED AT 11:48:29 ON 13 MAY 2005
L3            4 SEA L2

     FILE 'WPIX' ENTERED AT 11:48:30 ON 13 MAY 2005
L4            1 US20040225010/PN

     FILE 'HCAPLUS' ENTERED AT 11:48:50 ON 13 MAY 2005

=> b hcap
FILE 'HCAPLUS' ENTERED AT 11:49:14 ON 13 MAY 2005
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FILE COVERS 1907 - 13 May 2005  VOL 142 ISS 21
FILE LAST UPDATED: 12 May 2005  (20050512/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d all l1 tot

L1   ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2004:964837  HCAPLUS
DN   141:374732
ED   Entered STN:  12 Nov 2004
TI   24-Epibrassinolide for decreasing cholesterol level in blood
IN   Khripach, Vladimir; Altsivanovich, Konstantin; Zhabinskii, Vladimir;
     Samusevich, Mikhail
PA   Mikonik Technologies, Ltd, Belarus; Drebsk Comptech, Inc.
SO   U.S. Pat. Appl. Publ., 6 pp.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  A61K031-365
INCL 514450000
CC   1-10 (Pharmacology)
     Section cross-reference(s): 11, 18, 63
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     --------------      ----   --------    --------------------   --------
```

PI US 2004225010 A1 20041111 US 2004-710613 20040723 <--
PRAI US 2004-710613 20040723
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004225010	ICM	A61K031-365
	INCL	514450000
US 2004225010	NCL	514/450.000
	ECLA	A61K031/365 <--

AB The invention discloses a method for improving blood cholesterol and its conjugates levels in a mammal, which is based on the administration of steroidal plant hormone 24-epibrassinolide.
ST epibrassinolide blood cholesterol plant hormone
IT Glycerides, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(blood; method for decreasing cholesterol level in blood)
IT Drug delivery systems
(capsules; method for decreasing cholesterol level in blood)
IT Diet
(cholesterol-enriched; method for decreasing cholesterol level in blood)
IT Drug delivery systems
(emulsions, aqueous; method for decreasing cholesterol level in blood)
IT Lipoproteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(high-d.; method for decreasing cholesterol level in blood)
IT Lipoproteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(low-d.; method for decreasing cholesterol level in blood)
IT Drug delivery systems
Hypercholesterolemia
Hypolipemic agents
Nutrition, animal
(method for decreasing cholesterol level in blood)
IT Natural products, pharmaceutical
RL: FFD (Food or feed use); NPO (Natural product occurrence); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(method for decreasing cholesterol level in blood)
IT Drug delivery systems
(powders; method for decreasing cholesterol level in blood)
IT Drug delivery systems
(solns.; method for decreasing cholesterol level in blood)
IT Diet
(supplements; method for decreasing cholesterol level in blood)
IT Drug delivery systems
(suspensions; method for decreasing cholesterol level in blood)
IT Drug delivery systems
(tablets; method for decreasing cholesterol level in blood)
IT 57-88-5, Cholest-5-en-3-ol (3β)-, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(blood; method for decreasing cholesterol level in blood)
IT 1406-18-4, Vitamin E 11103-57-4, Vitamin A
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(method for decreasing cholesterol level in blood)
IT 78821-43-9, 24-Epibrassinolide
RL: FFD (Food or feed use); NPO (Natural product occurrence); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(method for decreasing cholesterol level in blood)

=> b reg
FILE 'REGISTRY' ENTERED AT 11:49:21 ON 13 MAY 2005
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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 12 MAY 2005 HIGHEST RN 850400-93-0
DICTIONARY FILE UPDATES: 12 MAY 2005 HIGHEST RN 850400-93-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

****
* *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
* *
****

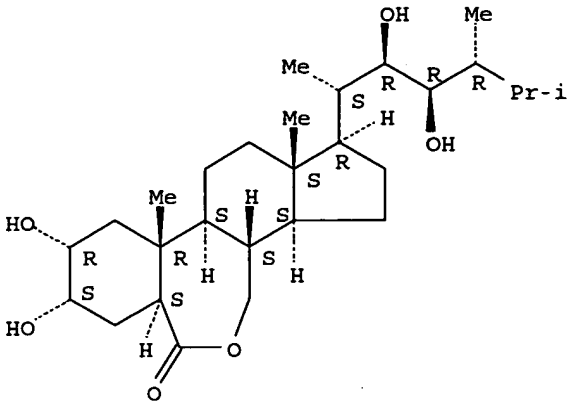
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d ide l3 tot

L3 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2005 ACS on STN
RN **78821-43-9** REGISTRY
ED Entered STN: 16 Nov 1984
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-, (2α,3α,5α,22R,23R)-
OTHER NAMES:
CN 24(R)-Epibrassinolide
CN 24-epi-Brassinolide
CN 24-Epibrassinolide
CN 24-epibrassinolide
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-(2,3-dihydroxy-1,4,5-trimethylhexyl)hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, [1R-[1α(1S*,2R*,3R*,4R*),3aβ,3bα,6aβ,8β,9β,10aα,10bβ,12aα]]-
CN B 1105
CN BP 55
CN Epibrassinolide
CN Epibrassinolide R
CN Epin
FS STEREOSEARCH
DR 126721-49-1
MF C28 H48 O6
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CSCHEM, PROMT, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

313 REFERENCES IN FILE CA (1907 TO DATE)
5 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
313 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 2 OF 4 REGISTRY COPYRIGHT 2005 ACS on STN
RN **11103-57-4** REGISTRY
ED Entered STN: 16 Nov 1984
CN Vitamin A (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Chocola A
CN Hydrovit A
CN LPK
CN Microvit A
CN Provitamin A
CN Rovimix A 500
DR 1341-18-0, 1406-67-3, 53637-36-8
MF Unspecified
CI COM, MAN
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, CA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMLIST, CIN, CSCHEM, CSNB, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, NIOSHTIC, PHAR, PIRA, PROMT, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
16471 REFERENCES IN FILE CA (1907 TO DATE)
516 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
16478 REFERENCES IN FILE CAPLUS (1907 TO DATE)

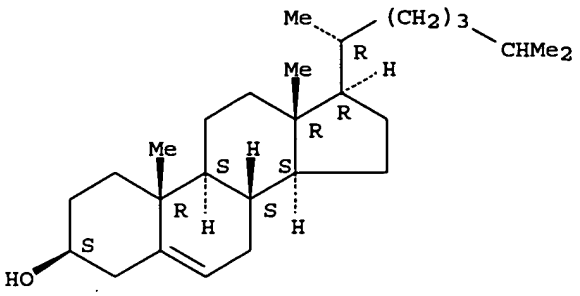
L3 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2005 ACS on STN
RN **1406-18-4** REGISTRY
ED Entered STN: 16 Nov 1984
CN Vitamin E (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Aquasol E
CN Covitol F 1300
CN E-Mix 40
CN E-Mix 70L
CN Erevit forte
CN Evion
CN Fujimix E 20N
CN Hydrovit E forte

CN Irganox E 217
CN Irganox E 218
CN Juvela E
CN Juvela Food 500
CN MDE 6000
CN Palmvitee
CN Riken E Oil 100
CN Rocavit E
CN Rontex 201
CN Sunactive VE 202
CN Sunactive VE 720
DR 11105-14-9
MF Unspecified
CI COM, MAN
LC STN Files: ADISNEWS, AGRICOLA, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DIOGENES, EMBASE, IFICDB, IFIPAT, IFIUDB, IMSCOSEARCH, IPA, MEDLINE, MRCK*, NAPRALERT, NIOSHTIC, PIRA, PROMT, TOXCENTER, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
20698 REFERENCES IN FILE CA (1907 TO DATE)
317 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
20719 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2005 ACS on STN
RN 57-88-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Cholesterol (8CI)
OTHER NAMES:
CN (-)-Cholesterol
CN Δ5-Cholesten-3β-ol
CN 3β-Hydroxycholest-5-ene
CN 5:6-Cholesten-3β-ol
CN Cholest-5-en-3β-ol
CN Cholesterin
CN Cholesteryl alcohol
CN Dythol
CN Lidinit
CN Lidinite
CN NSC 8798
CN Provitamin D
FS STEREOSEARCH
DR 849593-11-9, 732297-95-9, 793670-51-6, 80356-14-5, 80356-33-8, 209124-38-9, 218965-24-3, 262418-13-3, 378185-03-6, 676322-57-9
MF C27 H46 O
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

108675 REFERENCES IN FILE CA (1907 TO DATE)
9623 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
108766 REFERENCES IN FILE CAPLUS (1907 TO DATE)
15 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> b wpix

FILE 'WPIX' ENTERED AT 11:49:27 ON 13 MAY 2005
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FILE LAST UPDATED: 12 MAY 2005 <20050512/UP>
MOST RECENT DERWENT UPDATE: 200530 <200530/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
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>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
http://thomsonderwent.com/coverage/latestupdates/ <<<

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GUIDES, PLEASE VISIT:
http://thomsonderwent.com/support/userguides/ <<<

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DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX
FIRST VIEW - FILE WPIFV.
FOR FURTHER DETAILS: http://www.thomsonderwent.com/dwpifv <<<

>>> THE CPI AND EPI MANUAL CODES HAVE BEEN REVISED FROM UPDATE 200501.
PLEASE CHECK:
http://thomsonderwent.com/support/dwpiref/reftools/classification/code-revision/
FOR DETAILS. <<<

=> d all l4 tot

L4 ANSWER 1 OF 1 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2004-803987 [79] WPIX
DNC C2004-280601
TI Composition useful for decreasing cholesterol, low-density lipoprotein and increasing high-density lipoprotein comprises 24-epibrassinolide.
DC B01 D13
IN ALTSIVANOVICH, K; KHRIPACH, V; SAMUSEVICH, M; ZHABINSKII, V
PA (DREB-N) DREBSK COMPTECH INC; (MIKO-N) MIKONIK TECHNOLOGIES LTD
CYC 1
PI US 2004225010 A1 20041111 (200479)* 6 A61K031-365 <--
ADT US 2004225010 A1 US 2004-710613 20040723

PRAI US 2004-710613 20040723
IC ICM A61K031-365
AB US2004225010 A UPAB: 20041208
NOVELTY - A pharmaceutical composition comprises 24-epibrassinolide (EBI).
ACTIVITY - Cardiant; Cardiovascular-Gen.; Antiarteriosclerotic.
White rats initially fed with a standard food and drink diet were tested for decrease in cholesterol level in the blood serum. 24-Epibrassinolide (EBI) (test) was administered intra-gastrularly as a water solution at 0.2, 2, 20 and 200 mu g/kg for 36 weeks. Another group was administered with equivalent amount of placebo (control). The results for test showed cholesterol levels of 62.17 plus or minus 5.54 (at 0.2 mu g/kg), 57.81 plus or minus 6.34 (at 2 mu g/kg), 54.25 plus or minus 3.17 (at 20 mu g/kg), and 51.08 plus or minus 5.15 (preferably 200 mu g/kg) respectively whereas the control showed cholesterol level of 68.11 plus or minus 4.75. The results showed that the test reduced total cholesterol in rats under normal diet in a dose-dependent mode as compared to the control.
MECHANISM OF ACTION - None given.
USE - As food supplement incorporated into food material; for decreasing cholesterol, low-density lipoprotein and triglyceride levels; for increasing high-density lipoprotein, vitamin E and vitamin A levels in blood under cholesterol-enriched and normal diet (claimed); and also in the treatment of hypercholesterolemia, cardiovascular diseases such as atherosclerosis, normocholesterolemia and coronary heart disease in mammals.
ADVANTAGE - The composition is a potent anti-arteriosclerotic agent that lowers cholesterol, low-density lipoprotein and triglyceride levels and increases high-density lipoprotein, vitamin E and vitamin A levels without having negative consequences on health of patients; and can be easily prepared.
Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B06-A03; B14-F01; B14-F01E; B14-F02; B14-F06; B14-F07; D03-H01T2

=> b home
FILE 'HOME' ENTERED AT 11:49:43 ON 13 MAY 2005

=>

=> b reg
FILE 'REGISTRY' ENTERED AT 12:20:51 ON 13 MAY 2005
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STRUCTURE FILE UPDATES: 12 MAY 2005 HIGHEST RN 850400-93-0
DICTIONARY FILE UPDATES: 12 MAY 2005 HIGHEST RN 850400-93-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

****
*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*
****

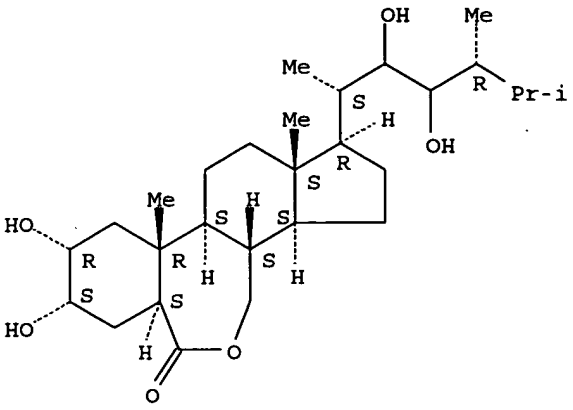
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d ide l11 tot

L11 ANSWER 1 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 267221-93-2 REGISTRY
ED Entered STN: 30 May 2000
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C28 H48 O6
SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

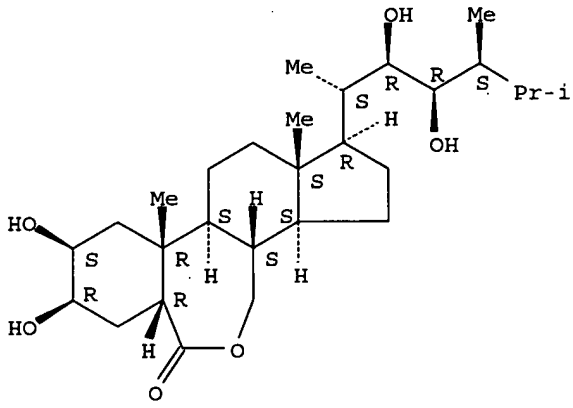


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 2 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN **259104-16-0** REGISTRY
ED Entered STN: 13 Mar 2000
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aR,8R,9S,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2,3,5-Tri-epi-brassinolide
FS STEREOSEARCH
MF **C28 H48 O6**
SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

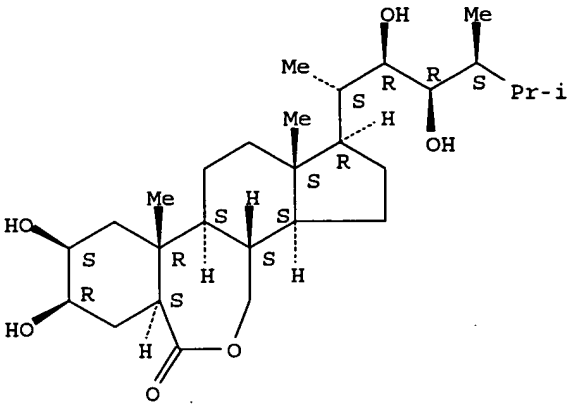


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 3 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 220401-55-8 REGISTRY
ED Entered STN: 11 Mar 1999
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8R,9S,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2,3-Di-epi-brassinolide
FS STEREOSEARCH
MF C28 H48 O6
SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

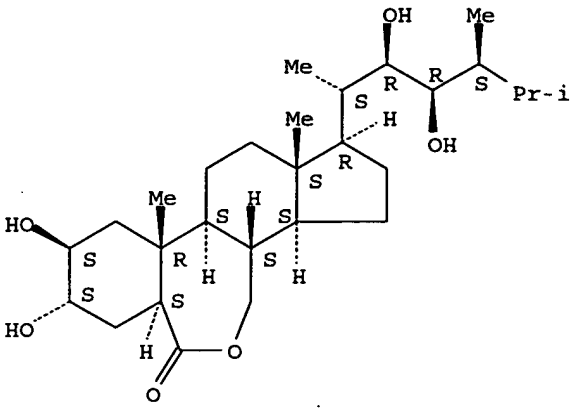


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 4 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 220401-52-5 REGISTRY
ED Entered STN: 11 Mar 1999
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9S,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2-epi-Brassinolide
FS STEREOSEARCH
MF C28 H48 O6
SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

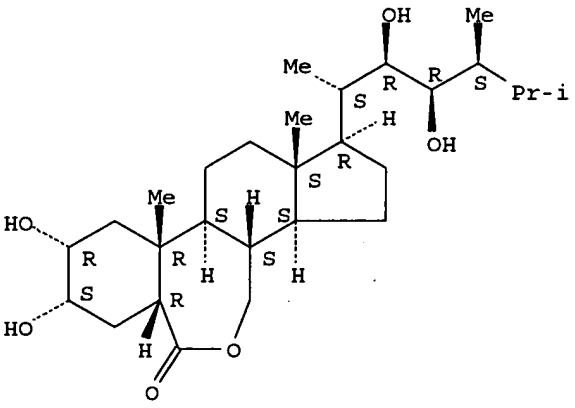


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 5 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN **218623-69-9** REGISTRY
ED Entered STN: 29 Jan 1999
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aR,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 5-epi-Brassinolide
FS STEREOSEARCH
MF **C28 H48 O6**
SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

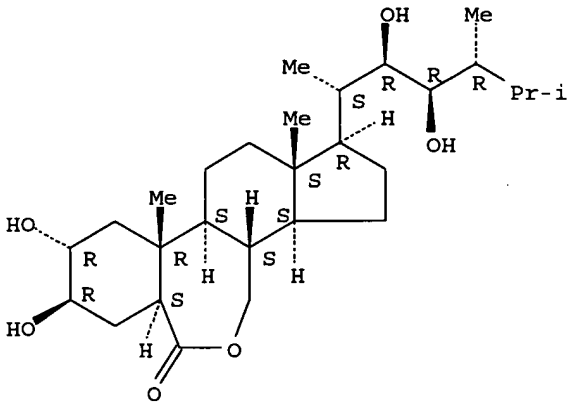


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 6 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN **163514-19-0** REGISTRY
ED Entered STN: 06 Jun 1995
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8R,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-, (2α,3β,5α,22R,23R)-
OTHER NAMES:
CN 3,24-Diepibrassinolide
FS STEREOSEARCH
MF **C28 H48 O6**
SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

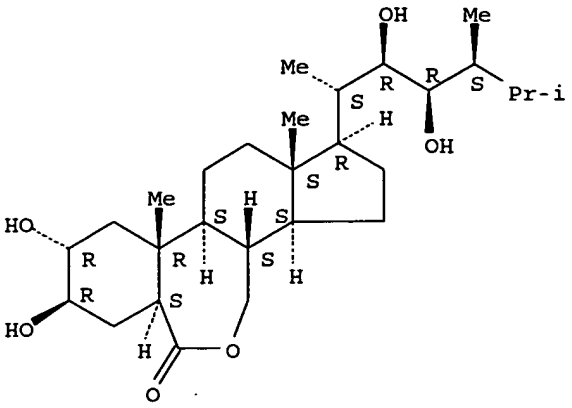


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

- 1 REFERENCES IN FILE CA (1907 TO DATE)
  1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 7 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN **140923-40-6** REGISTRY
ED Entered STN: 01 May 1992
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8R,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 6H-Benz[c]indeno[5,4-e]oxepin, B-homo-7-oxaergostan-6-one deriv.
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-, (2α,3β,5α,22R,23R,24S)-
OTHER NAMES:
CN 3-Epibrassinolide
FS STEREOSEARCH
MF **C28 H48 O6**
SR CA
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.

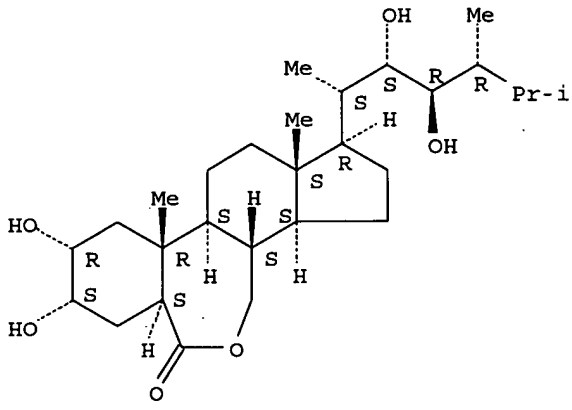


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 8 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 135559-12-5 REGISTRY
ED Entered STN: 16 Aug 1991
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2S,3R,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 6H-Benz[c]indeno[5,4-e]oxepin, B-homo-7-oxaergostan-6-one deriv.
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-, (2α,3α,5α,22S,23R)-
FS STEREOSEARCH
MF C28 H48 O6
SR CA
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

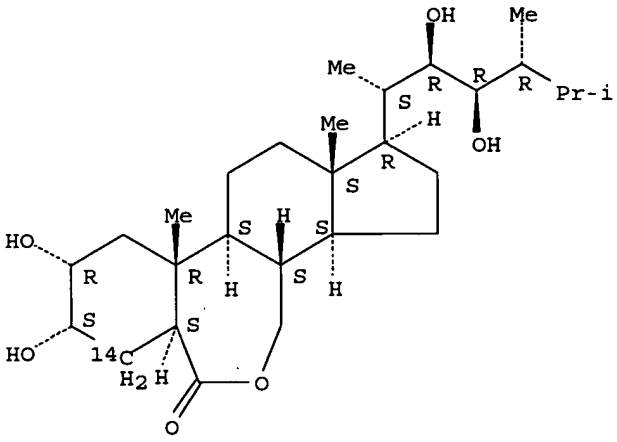
1 REFERENCES IN FILE CA (1907 TO DATE)

Search done by Noble Jarrell

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 9 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 128134-34-9 REGISTRY
ED Entered STN: 13 Jul 1990
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one-7-14C, 1-[(1S,2R,3R,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 6H-Benz[c]indeno[5,4-e]oxepin, B-homo-7-oxaergostan-6-one-4-14C deriv.
CN B-Homo-7-oxaergostan-6-one-4-14C, 2,3,22,23-tetrahydroxy-, (2α,3α,5α,22R,23R)-
FS STEREOSEARCH
MF C28 H48 O6
SR CA
LC STN Files: CA, CAPLUS, CASREACT

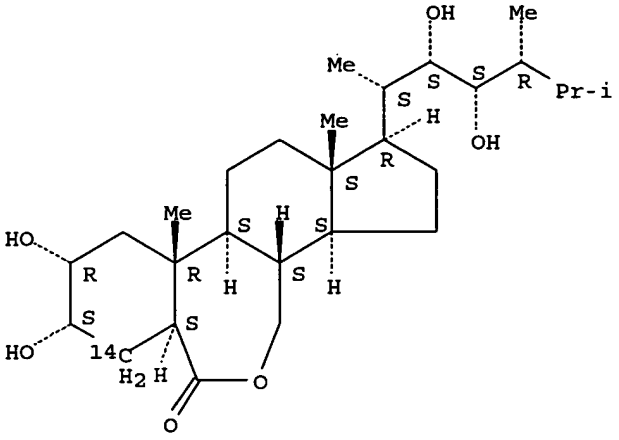
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 10 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 128097-87-0 REGISTRY
ED Entered STN: 06 Jul 1990
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one-7-14C, 1-[(1S,2S,3S,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 6H-Benz[c]indeno[5,4-e]oxepin, B-homo-7-oxaergostan-6-one-4-14C deriv.
CN B-Homo-7-oxaergostan-6-one-4-14C, 2,3,22,23-tetrahydroxy-, (2α,3α,5α,22S,23S)-
FS STEREOSEARCH
MF C28 H48 O6
SR CA
LC STN Files: CA, CAPLUS, CASREACT

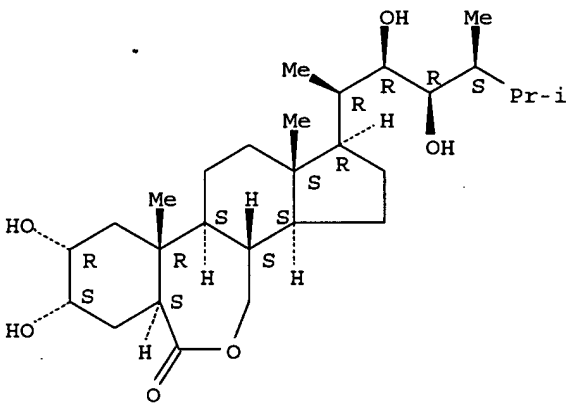
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 11 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN **113666-77-6** REGISTRY
ED Entered STN: 02 Apr 1988
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1R,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 6H-Benz[c]indeno[5,4-e]oxepin, B-homo-7-oxaergostan-6-one deriv.
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-, (2α,3α,5α,20R,22R,23R,24S)-
FS STEREOSEARCH
MF **C28 H48 O6**
SR CA
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.



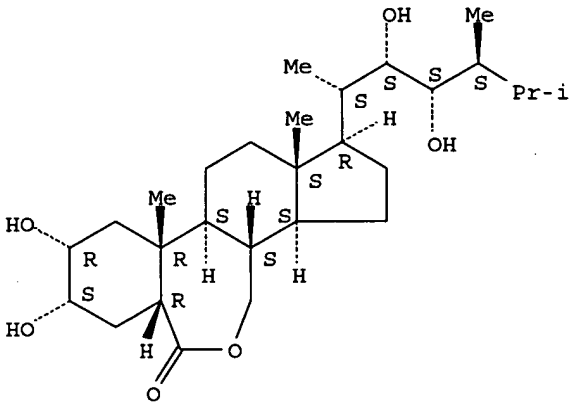
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

Search done by Noble Jarrell

L11 ANSWER 12 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN **110453-84-4** REGISTRY
ED Entered STN: 27 Sep 1987
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-,
(2α,3α,5β,22S,23S,24S)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 6H-Benz[c]indeno[5,4-e]oxepin, B-homo-7-oxaergostan-6-one deriv.
OTHER NAMES:
CN (22S,23S,24S)-Epibrassinolide
FS STEREOSEARCH
MF **C28 H48 O6**
SR CA
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.

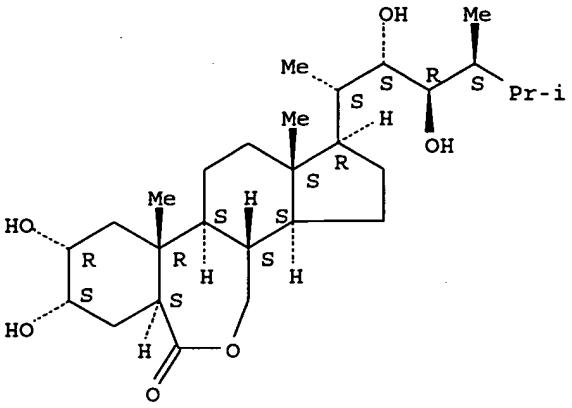


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 13 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN **93860-62-9** REGISTRY
ED Entered STN: 30 Dec 1984
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-,
(2α,3α,5α,22S,23R,24S)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 6H-Benz[c]indeno[5,4-e]oxepin, B-homo-7-oxaergostan-6-one deriv.
FS STEREOSEARCH
MF **C28 H48 O6**
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.

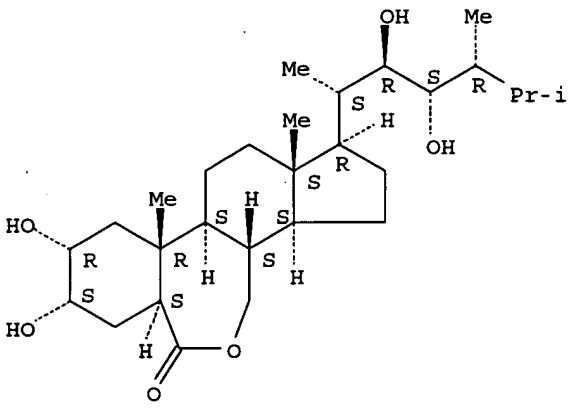


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 14 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN **93860-61-8** REGISTRY
ED Entered STN: 30 Dec 1984
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-, (2α,3α,5α,22R,23S)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 6H-Benz[c]indeno[5,4-e]oxepin, B-homo-7-oxaergostan-6-one deriv.
OTHER NAMES:
CN NSC 325611
FS STEREOSEARCH
MF **C28 H48 O6**
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.

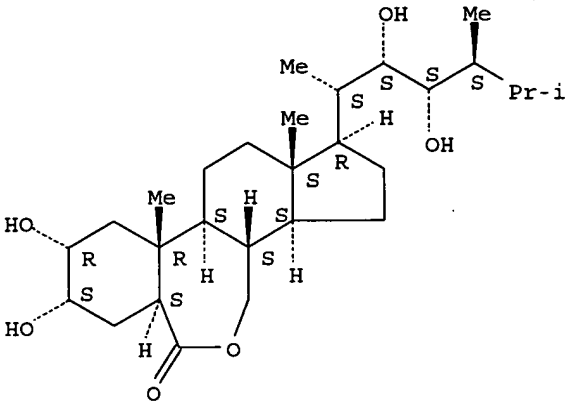


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 15 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 80736-39-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2S,3S,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-, (2α,3α,5α,22S,23S,24S)-
FS STEREOSEARCH
MF C28 H48 O6
CI COM
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMCATS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

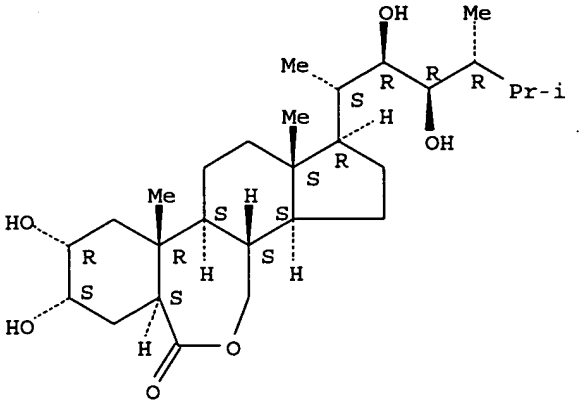
8 REFERENCES IN FILE CA (1907 TO DATE)
8 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 16 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN 78821-43-9 REGISTRY
ED Entered STN: 16 Nov 1984
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-, (2α,3α,5α,22R,23R)-
OTHER NAMES:
CN 24(R)-Epibrassinolide
CN 24-epi-Brassinolide
CN 24-Epibrassinolide
CN 24-epibrassinolide
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-(2,3-dihydroxy-1,4,5-trimethylhexyl)hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, [1R-[1α(1S*,2R*,3R*,4R*),3aβ,3bα,6aβ,8β,9β,10aα,10bβ,12aα]]-
CN B 1105
CN BP 55
CN Epibrassinolide
CN Epibrassinolide R

Search done by Noble Jarrell

CN Epin
FS STEREOSEARCH
DR 126721-49-1
MF **C28 H48 O6**
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CSCHEM, PROMT, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry.

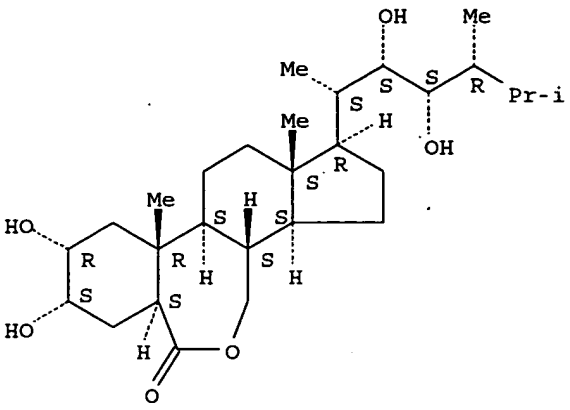


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

313 REFERENCES IN FILE CA (1907 TO DATE)
5 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
313 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 17 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN **78821-42-8** REGISTRY
ED Entered STN: 16 Nov 1984
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2S,3S,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-, (2α,3α,5α,22S,23S)-
OTHER NAMES:
CN (22S,23S)-24-Epibrassinolide
CN 22,23,24-Triepibrassinolide
CN 22,23,24-Trisepibrassinolide
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-(2,3-dihydroxy-1,4,5-trimethylhexyl)hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, [1R-[1α(1S*,2S*,3S*,4R*),3aβ,3bα,6aβ,8β,9β,10aα,10bβ,12aα]]-
CN B 1072
CN Brassinosteroid
CN Epibrassinolide S
CN Isoepibrassinolide
FS STEREOSEARCH
DR 126722-25-6
MF **C28 H48 O6**
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CEN, CHEMINFORMRX, CIN, PROMT, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry.

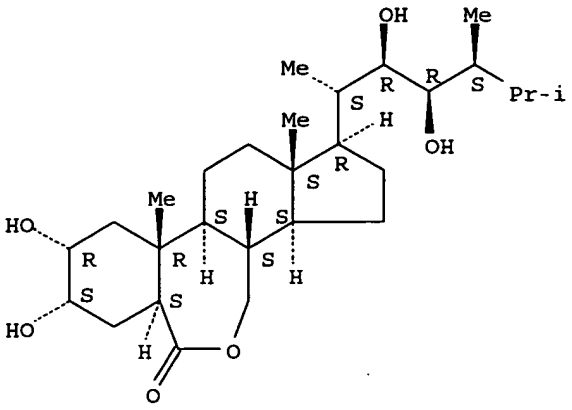


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

149 REFERENCES IN FILE CA (1907 TO DATE)
17 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
149 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 18 OF 18 REGISTRY COPYRIGHT 2005 ACS on STN
RN **72962-43-7** REGISTRY
ED Entered STN: 16 Nov 1984
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN B-Homo-7-oxaergostan-6-one, 2,3,22,23-tetrahydroxy-, (2α,3α,5α,22R,23R,24S)-
OTHER NAMES:
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-(2,3-dihydroxy-1,4,5-trimethylhexyl)hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, [1R-[1α(1S*,2R*,3R*,4S*),3aβ,3bα,6aβ,8β,9β,10aα,10bβ,12aα]]-
CN Brassinolide
FS STEREOSEARCH
MF **C28 H48 O6**
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMINFORMRX, CIN, CSCHEM, EMBASE, IPA, MEDLINE, MRCK*, NAPRALERT, PROMT, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

554 REFERENCES IN FILE CA (1907 TO DATE)
32 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
554 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d his full

(FILE 'HOME' ENTERED AT 11:47:30 ON 13 MAY 2005)

FILE 'HCAPLUS' ENTERED AT 11:48:03 ON 13 MAY 2005
L1 1 SEA ABB=ON PLU=ON US20040225010/PN

FILE 'REGISTRY' ENTERED AT 11:48:27 ON 13 MAY 2005

FILE 'HCAPLUS' ENTERED AT 11:48:28 ON 13 MAY 2005
L2 TRA L1 1- RN : 4 TERMS

FILE 'REGISTRY' ENTERED AT 11:48:29 ON 13 MAY 2005
L3 4 SEA ABB=ON PLU=ON L2

FILE 'WPIX' ENTERED AT 11:48:30 ON 13 MAY 2005
L4 1 SEA ABB=ON PLU=ON US20040225010/PN

FILE 'REGISTRY' ENTERED AT 12:13:00 ON 13 MAY 2005
D SCA L3
L5 184 SEA ABB=ON PLU=ON C28H48O6
L6 1 SEA ABB=ON PLU=ON C28H48O6 AND L3
D STR RSD
L7 69 SEA ABB=ON PLU=ON 5235.7.1/RID AND L5
L8 QUE ABB=ON PLU=ON (PMS OR MAN OR IDS)/CI OR UNSPECIFIED OR COMPD OR COMPOUND OR (D OR T)/ELS
L9 59 SEA ABB=ON PLU=ON L7 NOT L8
L10 20 SEA ABB=ON PLU=ON L9 NOT (MXS/CI OR MIXT)
D SCA
D STR TOT L10
SEL RN 2-15 17-20 L10
L11 18 SEA ABB=ON PLU=ON (110453-84-4/BI OR 113666-77-6/BI OR 128097-87-0/BI OR 128134-34-9/BI OR 135559-12-5/BI OR 140923-40-6/BI OR 163514-19-0/BI OR 218623-69-9/BI OR 220401-52-5/BI OR 220401-55-8/BI OR 259104-16-0/BI OR 267221-93-2/BI OR 72962-43-7/BI OR 78821-42-8/BI OR 78821-43-9/BI OR 80736-39-6/BI OR 93860-61-8/BI OR 93860-62-9/BI) AND L10

FILE 'HCAPLUS' ENTERED AT 12:31:19 ON 13 MAY 2005

```
L12        1574 SEA ABB=ON  PLU=ON  L11 OR ?BRASSINOLIDE? OR BENZ? (1A) INDENO
                (3A) OXEPIN? (1A) (ONE OR HOMO (1A) (OXAERGOSTAN? OR OXA (1A)
                ERGOSTAN?) (1A) ONE) OR NSC325611 OR NSC (1A) (325611 OR 325
                (1A) 611) OR B1105 OR B (1A)1105 OR BP55 OR BP (1A)55 OR EPIN#
L13        1165 SEA ABB=ON  PLU=ON  HOMO (1A) (OXAERGOSTAN? OR OXA (1A)
                ERGOSTAN?) (1A) ONE OR ?BRASSINOSTEROID?

     FILE 'REGISTRY' ENTERED AT 12:38:03 ON 13 MAY 2005
                SAV TEM L11 HAR613STR/A

     FILE 'HCAPLUS' ENTERED AT 12:38:14 ON 13 MAY 2005
                E CHOLESTEROL/CT
                E E3+ALL
L14      111357 SEA ABB=ON  PLU=ON  CHOLESTEROL+NT/CT
                E E15
                E E3+ALL
L15        9966 SEA ABB=ON  PLU=ON  ANTICHOLESTEREMIC AGENTS
                E LOW DESITY LIPOPROTEIN/CT
                E E2+ALL
                E LOW DENSITY LIPOPROTEIN/CT
                E LDL/CT
                E E4+ALL
                E LIPOPROTEINS/CT
                E E3+ALL
L16       29453 SEA ABB=ON  PLU=ON  LIPOPROTEINS+NT/CT (L) LC
                DENS?)
L17       14890 SEA ABB=ON  PLU=ON  LIPOPROTEINS+NT/CT (L) ?C
L18       36436 SEA ABB=ON  PLU=ON  (L16 OR L17)
L19          33 SEA ABB=ON  PLU=ON  (L12 OR L13) AND (L14 OR
                OR L18)
                E KHRIPACH V/AU
L20         240 SEA ABB=ON  PLU=ON  ("KHRIPACH V"/AU OR "KHRI
                "KHRIPACH V N"/AU OR "KHRIPACH V V"/AU OR "KHF
                U OR "KHRIPACH VLADIMIR A"/AU OR "KHRIPACH VLA
                E ALTSIVANOVICH K/AU
L21           2 SEA ABB=ON  PLU=ON  "ALTSIVANOVICH KONSTANTIN"
                E ZHABINSKII V/AU
L22          69 SEA ABB=ON  PLU=ON  ("ZHABINSKII V"/AU OR "ZHA
                OR "ZHABINSKII VLADIMIR"/AU OR "ZHABINSKII VLADIMIR N"/AU OR
                "ZHABINSKIJ V N"/AU OR "ZHABINSKIJ VLADIMIR N"/AU)
                E SAMUSEVICH M/AU
L23           2 SEA ABB=ON  PLU=ON  "SAMUSEVICH MIKHAIL"/AU
L24           2 SEA ABB=ON  PLU=ON  (DREBSK OR MIKONIK)/CS,PA
L25           1 SEA ABB=ON  PLU=ON  L19 AND (L20 OR L21 OR L22 OR L23 OR L24)
L26          32 SEA ABB=ON  PLU=ON  L19 NOT L25
L27             QUE ABB=ON  PLU=ON  PY<=2004 OR AY<=2004 OR PRY<=2004 OR
                PD<20040723 OR PRD<20040723 OR AD<20040723
L28          32 SEA ABB=ON  PLU=ON  L26 AND L27
                E DRUG DELIVERY/CT
                E E7+ALL
L29             QUE ABB=ON  PLU=ON  DRUG DELIVERY SYSTEMS+OLD,NT/CT
                E DRUG ADMIN/CT
L30           0 SEA ABB=ON  PLU=ON  L28 AND L29
L31         246 SEA ABB=ON  PLU=ON  (L12 OR L13) (L) (THU OR USES)/RL
L32           2 SEA ABB=ON  PLU=ON  L31 AND (L14 OR L15 OR L16 OR L17)
                D SCA
L33           1 SEA ABB=ON  PLU=ON  L32 AND (L20 OR L21 OR L22 OR L23 OR L24)
L34           1 SEA ABB=ON  PLU=ON  L32 NOT L33
L35          32 SEA ABB=ON  PLU=ON  L34 OR L28
L36           3 SEA ABB=ON  PLU=ON  (L12 OR L13) (L)FFD/RL
L37           2 SEA ABB=ON  PLU=ON  L36 AND (L20 OR L21 OR L22 OR L23 OR L24)
L38           1 SEA ABB=ON  PLU=ON  L36 NOT L37
L39           0 SEA ABB=ON  PLU=ON  L38 AND (L14 OR L15 OR L16 OR L17)
L40           2 SEA ABB=ON  PLU=ON  L25 OR L33 OR L37
L41          33 SEA ABB=ON  PLU=ON  L38 OR L35
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L40: APP
L41: NOT APPLICANT

Search done by Noble Jarrell

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=> d all fhitstr l40 tot

L40  ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2004:1080523  HCAPLUS
DN   142:16788
ED   Entered STN:  17 Dec 2004
TI   Natural plant compound with anti-hiv activity
IN   Khripach, Vladimir; Altsivanovich, Konstantin;
     Zabinskii, Vladimir; Samusevich, Mikhail
PA   Mikonik Technologies, Ltd., Belarus; Drebsk Comptech,
     Inc.
SO   U.S. Pat. Appl. Publ., 5 pp.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  A61K031-415
     ICS  A01N043-52; A61K047-00; A61K035-78; A61K009-20; A61K009-48;
          A61K009-14
INCL 424422000; 424464000; 424465000; 424439000; 424451000; 424489000;
     424725000
CC   1-5 (Pharmacology)
     Section cross-reference(s): 11, 17
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    -------------------    --------
PI   US 2004253289        A1    20041216    US 2004-711162         20040828
PRAI US 2004-711162             20040828
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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 US 2004253289   ICM    A61K031-415
                 ICS    A01N043-52; A61K047-00; A61K035-78; A61K009-20;
                        A61K009-48; A61K009-14
                 INCL   424422000; 424464000; 424465000; 424439000; 424451000;
                        424489000; 424725000
 US 2004253289   NCL    424/422.000; 424/464.000; 424/465.000; 424/439.000;
                        424/451.000; 424/489.000; 424/725.000
                 ECLA   A61K031/415; A61K031/415+M; A61K045/06
AB   The invention comprises a method for treatment of HIV-infection and
     related conditions, particularly AIDS, using plant hormone
     24-epibrassinolide, anti-HIV efficacy of which is disclosed.
```

ST epibrassinolide natural plant hormone HIV antiHIV
IT Hormones, plant
RL: **FFD (Food or feed use)**; NPO (Natural product occurrence); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(**brassinosteroids**; natural plant compound, 24-**epibrassinolide** with anti-hiv activity)
IT Drug delivery systems
(capsules; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT Drug delivery systems
(coating; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT Contraceptives
(condoms; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT Drug delivery systems
(emulsions, aqueous; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT AIDS (disease)
Anti-AIDS agents
Combination chemotherapy
Drug delivery systems
Food
Human
Human immunodeficiency virus
(natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT Natural products, pharmaceutical
RL: **FFD (Food or feed use)**; NPO (Natural product occurrence); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(natural plant compound, 24-**epibrassinolide** with anti-hiv activity)
IT Drug delivery systems
(ointments, creams; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT Drug delivery systems
(powders; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT Drug delivery systems
(solns.; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT Diet
(supplements; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT Drug delivery systems
(suppositories, vaginal; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT Drug delivery systems
(suspensions; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT Drug delivery systems
(tablets; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT Vagina
(tract, protection by HIV-inhibiting 24-epibrassinolid-containing composition; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT 9068-38-6
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HIV, inhibitor; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT 144114-21-6, HIV protease
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitor; natural plant compound, 24-epibrassinolide with anti-hiv activity)
IT **78821-43-9**, 24-**Epibrassinolide**

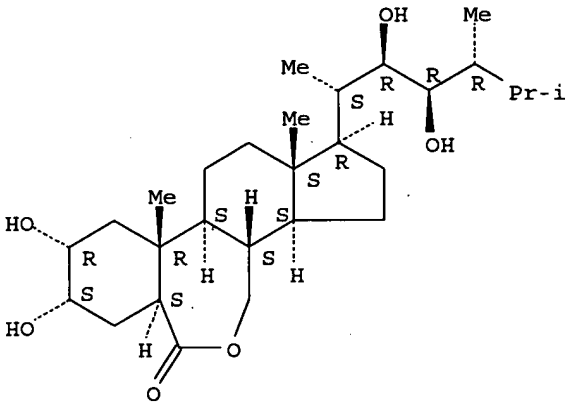
RL: **FFD (Food or feed use)**; NPO (Natural product occurrence); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(natural plant compound, 24-**epibrassinolide** with anti-hiv activity)

IT 52350-85-3, HIV integrase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(of HIV, inhibitor; natural plant compound, 24-epibrassinolide with anti-hiv activity)

IT **78821-43-9, 24-Epibrassinolide**
RL: **FFD (Food or feed use)**; NPO (Natural product occurrence); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(natural plant compound, 24-**epibrassinolide** with anti-hiv activity)

RN 78821-43-9 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L40 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:964837 HCAPLUS
DN 141:374732
ED Entered STN: 12 Nov 2004
TI 24-**Epibrassinolide** for decreasing cholesterol level in blood
IN **Khripach, Vladimir; Altsivanovich, Konstantin; Zhabinskii, Vladimir; Samusevich, Mikhail**
PA **Mikonik** Technologies, Ltd, Belarus; **Drebsk** Comptech, Inc.
SO U.S. Pat. Appl. Publ., 6 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM A61K031-365
INCL 514450000
CC 1-10 (Pharmacology)
Section cross-reference(s): 11, 18, 63
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004225010	A1	20041111	US 2004-710613	20040723
PRAI US 2004-710613		20040723		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES

US 2004225010 ICM A61K031-365
INCL 514450000
US 2004225010 NCL 514/450.000
ECLA A61K031/365

AB The invention discloses a method for improving blood cholesterol and its conjugates levels in a mammal, which is based on the administration of steroidal plant hormone 24-**epibrassinolide**.

ST **epibrassinolide** blood cholesterol plant hormone

IT Glycerides, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(blood; method for decreasing cholesterol level in blood)

IT Drug delivery systems
(capsules; method for decreasing cholesterol level in blood)

IT Diet
(cholesterol-enriched; method for decreasing cholesterol level in blood)

IT Drug delivery systems
(emulsions, aqueous; method for decreasing cholesterol level in blood)

IT **Lipoproteins**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(high-d.; method for decreasing **cholesterol** level in blood)

IT **Lipoproteins**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**low-d.**; method for decreasing **cholesterol** level in blood)

IT Drug delivery systems
Hypercholesterolemia
Hypolipemic agents
Nutrition, animal
(method for decreasing cholesterol level in blood)

IT Natural products, pharmaceutical
RL: FFD (Food or feed use); NPO (Natural product occurrence); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(method for decreasing cholesterol level in blood)

IT Drug delivery systems
(powders; method for decreasing cholesterol level in blood)

IT Drug delivery systems
(solns.; method for decreasing cholesterol level in blood)

IT Diet
(supplements; method for decreasing cholesterol level in blood)

IT Drug delivery systems
(suspensions; method for decreasing cholesterol level in blood)

IT Drug delivery systems
(tablets; method for decreasing cholesterol level in blood)

IT **57-88-5**, Cholest-5-en-3-ol (3β)-, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(blood; method for decreasing cholesterol level in blood)

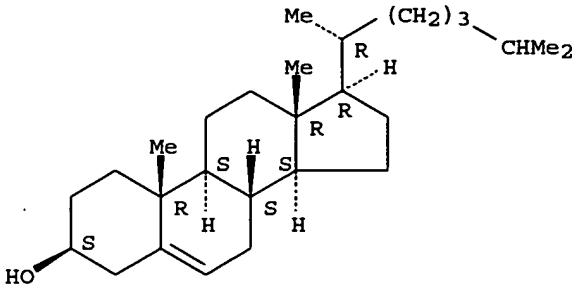
IT 1406-18-4, Vitamin E 11103-57-4, Vitamin A
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(method for decreasing cholesterol level in blood)

IT **78821-43-9**, 24-**Epibrassinolide**
RL: **FFD (Food or feed use)**; NPO (Natural product occurrence); PAC (Pharmacological activity); **THU (Therapeutic use)**; BIOL (Biological study); OCCU (Occurrence); **USES (Uses)**
(method for decreasing cholesterol level in blood)

IT **57-88-5**, Cholest-5-en-3-ol (3β)-, biological studies
RL: **FFD (Food or feed use)**; BIOL (Biological study); **THU (Therapeutic use)**; **USES (Uses)**
(blood; method for decreasing cholesterol level in blood)

RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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L41 ANSWER 1 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:725323 HCAPLUS
DN 141:391967
ED Entered STN: 07 Sep 2004
TI **Brassinosteroid** deficiency due to truncated steroid 5α-reductase causes dwarfism in the lk mutant of pea
AU Nomura, Takahito; Jager, Corinne E.; Kitasaka, Yukiko; Takeuchi, Keiichi; Fukami, Motohiro; Yoneyama, Koichi; Matsushita, Yasuhiko; Nyunoya, Hiroshi; Takatsuto, Suguru; Fujioka, Shozo; Smith, Jennifer J.; Kerckhoffs, L. Huub J.; Reid, James B.; Yokota, Takao
CS Department of Biosciences, Teikyo University, Utsunomiya, 320-8551, Japan
SO Plant Physiology (**2004**), 135(4), 2220-2229
CODEN: PLPHAY; ISSN: 0032-0889
PB American Society of Plant Biologists
DT Journal
LA English
CC 11-2 (Plant Biochemistry)
AB The endogenous **brassinosteroids** in the dwarf mutant lk of pea (Pisum sativum) were quantified by gas chromatog.-selected ion monitoring. The levels of castasterone, 6-deoxocastasterone, and 6-deoxotyphasterol in lk shoots were reduced 4-, 70-, and 6-fold, resp., compared with those of the wild type. The fact that the application of **brassinolide** restored the growth of the mutant indicated that the dwarf mutant lk is **brassinosteroid** deficient. Gas chromatog.-selected ion monitoring anal. of the endogenous sterols in lk shoots revealed that the levels of campestanol and sitostanol were reduced 160- and 10-fold, resp., compared with those of wild-type plants. These data, along with metabolic studies, showed that the lk mutant has a defect in the conversion of campest-4-en-3-one to 5α-campestan-3-one, which is a key hydrogenation step in the synthesis of campestanol from campesterol. This defect is the same as that found in the Arabidopsis det2 mutant and the Ipomoea nil kbt mutant. The pea gene homologous to the DET2 gene, PsDET2, was cloned, and it was found that the lk mutation would result in a putative truncated PsDET2 protein. Thus it was concluded that the short stature of the lk mutant is due to a defect in the steroidal 5α-reductase gene. This defect was also observed in the callus induced from the lk mutant. Biosynthetic pathways involved in the conversion of campesterol to campestanol are discussed in detail.
ST Pisum steroid reductase sequence **brassinosteroid** metab
IT Gene, plant
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(DET2; **brassinosteroid** deficiency due to truncated steroid 5α-reductase causes dwarfism in the lk mutant of pea)
IT Protein sequences
(alignment; **brassinosteroid** deficiency due to truncated steroid 5α-reductase causes dwarfism in the lk mutant of pea)
IT Pisum sativum

Protein sequences
cDNA sequences
(**brassinosteroid** deficiency due to truncated steroid 5α-reductase causes dwarfism in the lk mutant of pea)

IT Hormones, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**brassinosteroids**; **brassinosteroid** deficiency due to truncated steroid 5α-reductase causes dwarfism in the lk mutant of pea)

IT Growth and development, plant
(dwarfism; **brassinosteroid** deficiency due to truncated steroid 5α-reductase causes dwarfism in the lk mutant of pea)

IT Metabolic pathways
(proposed, for **brassinosteroid** biosynthesis; **brassinosteroid** deficiency due to truncated steroid 5α-reductase causes dwarfism in the lk mutant of pea)

IT 736016-68-5
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; **brassinosteroid** deficiency due to truncated steroid 5α-reductase causes dwarfism in the lk mutant of pea)

IT **57-88-5**, Cholesterol, biological studies 83-46-5 83-48-7, Stigmasterol 474-60-2, Campestanol 474-62-4, Campesterol 474-63-5, 24-Methylenecholesterol 481-14-1, Isofucosterol 9081-34-9, 5-Alpha-reductase 22260-46-4, Campest-4-en-3-one **72962-43-7**, **Brassinolide** 80736-41-0, Castasterone 87833-54-3, 6-Deoxo-castasterone 105368-91-0, Ergost-5-en-3-one 124853-28-7, 3-Dehydroteasterone 164034-47-3, 6-Deoxo-typhasterol 188397-19-5, 6-Deoxo-teasterone 244237-60-3, Campest-4-en-3β-ol
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**brassinosteroid** deficiency due to truncated steroid 5α-reductase causes dwarfism in the lk mutant of pea)

IT 736016-67-4
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(nucleotide sequence; **brassinosteroid** deficiency due to truncated steroid 5α-reductase causes dwarfism in the lk mutant of pea)

RE.CNT 82 THERE ARE 82 CITED REFERENCES AVAILABLE FOR THIS RECORD

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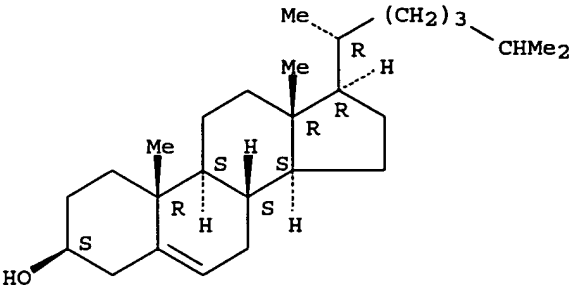
IT **57-88-5**, Cholesterol, biological studies **72962-43-7**, **Brassinolide**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**brassinosteroid** deficiency due to truncated steroid 5α-reductase causes dwarfism in the lk mutant of pea)

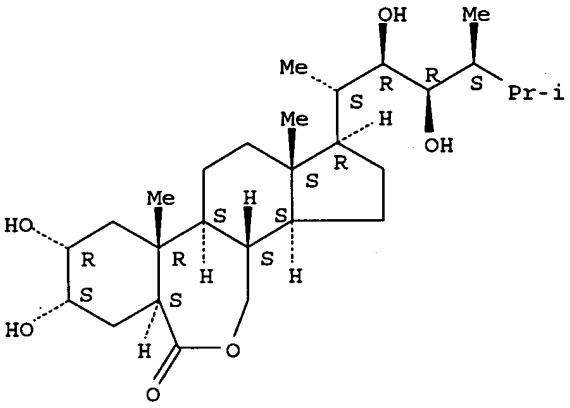
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 72962-43-7 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 2 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:607849 HCAPLUS
DN 141:274418
ED Entered STN: 30 Jul 2004
TI Novel biosynthetic pathway of castasterone from cholesterol in tomato
AU Kim, Tae-Wuk; Soo, Chul Chang; Lee, June Seung; Takatsuto, Suguru; Yokota, Takao; Kim, Seong-Ki
CS Department of Life Science, Chung-Ang University, Seoul, 156-756, S. Korea
SO Plant Physiology (2004), 135(3), 1231-1242
CODEN: PLPHAY; ISSN: 0032-0889
PB American Society of Plant Biologists
DT Journal
LA English
CC 11-2 (Plant Biochemistry)
Section cross-reference(s): 7
AB Endogenous **brassinosteroids** (BRs) in tomato (Lycopersicon esculentum) seedlings are known to be composed of C27- and C28-BRs. The biosynthetic pathways of C27-BRs were examined using a cell-free enzyme solution prepared from tomato seedlings that yielded the biosynthetic sequences cholesterol → cholestanol and 6-deoxo-28-norteasterone ↔ 6-deoxo-28-nor-3-dehydroteasterone ↔ 6-deoxo-28-nortyphasterol → 6-deoxo-28-norcastasterone → 28-norcastasterone (28-norCS). Arabidopsis CYP85A1 that was heterologously expressed in yeast mediated the conversion of 6-deoxo-28-norCS to 28-norCS. The same reaction was catalyzed by an enzyme solution from wild-type tomato but not by an extract derived from a tomato dwarf mutant with a defect in CYP85.

Furthermore, exogenously applied 28-norCS restored the abnormal growth of the dwarf mutant. These findings indicate that the C-6 oxidation of 6-deoxo-28-norCS to 28-norCS in tomato seedlings is catalyzed by CYP85, just as in the conversion of 6-deoxoCS to CS. Addnl., the cell-free solution also catalyzed the C-24 methylation of 28-norCS to CS in the presence of NADPH and S-adenosylmethionine (SAM), a reaction that was clearly retarded in the absence of NADPH and SAM. Thus it seems that C27-BRs, in addition to C28-BRs, are important in the production of more active C28-BRs and CS, where a SAM-dependent sterol methyltransferase appears to biosynthetically connect C27-BRs to C28-BRs. Moreover, the tomato cell-free solution converted CS to 26-norCS and [2H6]CS to [2H3]28-norCS, suggesting that C-28 demethylation is an artifact due to an isotope effect. Although previous feeding expts. employing [2H6]CS suggested that 28-norCS was synthesized from CS in certain plant species, this is not supported in planta. Altogether, this study demonstrated for the first time, to our knowledge, that 28-norCS is not synthesized from CS but from cholesterol. In addition, CS and [2H6]CS were not converted into BL and [2H6]BL, resp., confirming an earlier finding that the active BR in tomato seedlings is not BL but CS. In conclusion, the biosynthesis of 28-norBRs appears to play a physiol. important role in maintaining homeostatic levels of CS in tomato seedlings.

ST tomato **brassinosteroid** metab cholesterol castasterone CYP85

IT Hormones, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**brassinosteroids**; novel biosynthetic pathway of castasterone from cholesterol in tomato)

IT Growth and development, plant
Lycopersicon esculentum
Oxidation
(novel biosynthetic pathway of castasterone from cholesterol in tomato)

IT 9035-51-2, Cytochrome P-450, biological studies
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(85A1; novel biosynthetic pathway of castasterone from cholesterol in tomato)

IT 53-57-6, NADPH 80-97-7, Cholestanol 29908-03-0
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(novel biosynthetic pathway of castasterone from cholesterol in tomato)

IT **57-88-5**, Cholesterol, biological studies 80736-41-0, Castasterone 83464-85-1, 28-Norcastasterone 169624-26-4, 6-Deoxo-28-norcastasterone 378795-14-3, 6-Deoxo-28-norteasterone 378795-15-4, 6-Deoxo-28-nor-3-dehydroteasterone 378795-16-5, 6-Deoxo-28-nortyphasterol
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(novel biosynthetic pathway of castasterone from cholesterol in tomato)

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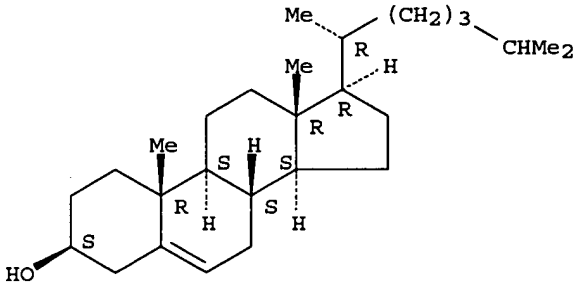
IT **57-88-5**, Cholesterol, biological studies
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(novel biosynthetic pathway of castasterone from cholesterol in tomato)

RN 57-88-5 HCAPLUS

CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 3 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:586154 HCAPLUS
DN 141:150378
ED Entered STN: 22 Jul 2004
TI Inhibitors of measles virus

AU Barnard, Dale L.
CS Institute for Antiviral Research, Dept. ADVS, Utah State University, Logan, UT, USA
SO Antiviral Chemistry & Chemotherapy (2004), 15(3), 111-119
CODEN: ACCHEH; ISSN: 0956-3202
PB International Medical Press
DT Journal; General Review
LA English
CC 1-0 (Pharmacology)
Section cross-reference(s): 15
AB A review. Measles virus (MV) infections have been almost eradicated in some industrialized nations. However, MV continues to cause severe disease and mortality in the world and is responsible for clusters of exogenous-borne disease in essentially disease-free countries. Because of the ebb and flow of immunization campaigns, especially in the poverty-stricken and war-torn Third World, and the ominous potential for severe disease and mortality, it is vital that research for discovery of therapeutic countermeasures should continue. To that end, a number of compds. have been evaluated for efficacy in vitro and in animal models, and several therapeutic modalities have been tested in the clinic. The only current therapies used in the clinic include ribavirin administered orally or i.v., alone or in combination with immune serum globulin; these therapies have demonstrated variable efficacy. Therefore, drug discovery efforts have been launched to supplement the existing treatments for MV infections. Antisense mols., adenosine and guanosine nucleosides, including ring-expanded "fat" nucleoside analogs, **brassinosteroids**, coumarins, peptide inhibitors, modulators of cholesterol synthesis and a variety of natural products have been screened for efficacy and toxicity both in vitro and in animals. However, none of these agents has gone into human clin. trials and most will not merit further development due to toxicity concerns and/or low potency. Thus, further research is needed to develop more potent and less toxic drugs that could be used for treating MV infections to supplement the existing MV vaccine campaigns.
ST review measles virus antiviral
IT Vaccines
(MV; inhibitors of measles virus)
IT Hormones, plant
RL: PAC (Pharmacological activity); BIOL (Biological study)
(**brassinosteroids**; inhibitors of measles virus)
IT Antiviral agents
Human
Measles virus
(inhibitors of measles virus)
IT Nucleoside analogs
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); BIOL (Biological study)
(inhibitors of measles virus)
IT 91-64-5D, Coumarin, derivs. 118-00-3D, Guanosine, nucleosides
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); BIOL (Biological study)
(inhibitors of measles virus)
IT 57-88-5, Cholesterol, biological studies
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); BIOL (Biological study)
(synthesis modulators; inhibitors of measles virus)
RE.CNT 86 THERE ARE 86 CITED REFERENCES AVAILABLE FOR THIS RECORD
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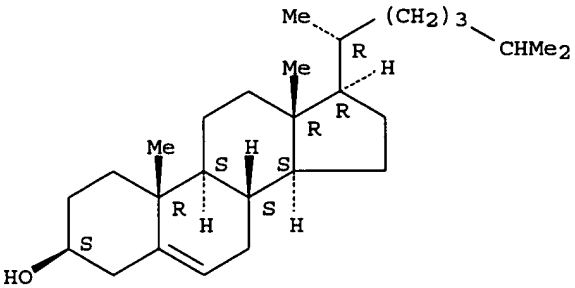
IT **57-88-5**, Cholesterol, biological studies
RL: ADV (Adverse effect, including toxicity); PAC (Pharmacological activity); BIOL (Biological study)
(synthesis modulators; inhibitors of measles virus)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 4 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:278658 HCAPLUS
DN 141:137092
ED Entered STN: 05 Apr 2004
TI Loss of function of 3-hydroxy-3-methylglutaryl coenzyme A reductase 1 (HMG1) in Arabidopsis leads to dwarfing, early senescence and male sterility, and reduced sterol levels
AU Suzuki, Masashi; Kamide, Yukiko; Nagata, Noriko; Seki, Hikaru; Ohyama, Kiyoshi; Kato, Hisashi; Masuda, Kazuo; Sato, Shusei; Kato, Tomohiko; Tabata, Satoshi; Yoshida, Shigeo; Muranaka, Toshiya
CS Plant Science Center, RIKEN, Tsurumi-ku, Yokohama, Kanagawa, 230-0045, Japan
SO Plant Journal (2004), 37(5), 750-761
CODEN: PLJUED; ISSN: 0960-7412
PB Blackwell Publishing Ltd.
DT Journal
LA English
CC 11-3 (Plant Biochemistry)
AB 3-Hydroxy-3-methylglutaryl-CoA reductase (HMGR) catalyzes the first committed step in the cytosolic isoprenoid biosynthesis pathway in higher plants. To understand the contribution of HMGR to plant development, we isolated T-DNA insertion mutants for HMG1 and HMG2. The hmg1 and hmg2

mutants were both more sensitive than the wild type (WT) to lovastatin, an inhibitor of HMGR. The hmg2 mutant showed no visible phenotype under normal growth conditions. In contrast, the hmg1 mutant exhibited dwarfing, early senescence, and sterility. Expression of senescence-associated genes 12 (SAG12), a marker gene for senescence, was induced in the hmg1 mutant at an earlier stage than in the WT. Levels of trans-cytokinins-hormones known to inhibit senescence - were not lower in hmg1. The mutant did not have the typical appearance of **brassinosteroid** (BR)-deficient mutants, except for a dwarf phenotype, because of the suppression of cell elongation. The expression of several genes involved in cell elongation was suppressed in hmg1. WT plants treated exogenously with inhibitors of sterol biosynthesis had similar gene expression and sterility characteristics as the hmg1 mutants. Pleiotropic phenotypes were rescued by feeding with squalene, the precursor of sterols and triterpenoids. The sterol levels in hmg1 mutants were lower than in the WT. These findings suggest that HMG1 plays a critical role in triterpene biosynthesis, and that sterols and/or triterpenoids contribute to cell elongation, senescence, and fertility.

ST Arabidopsis HMGR mutant plant growth senescence sterility sterol

IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cms; loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(dxr; loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(dxs; loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(for extensin-like protein; loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(hmg1; loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(hmg2; loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT Arabidopsis thaliana
Growth and development, plant
Senescence, plant
(loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT Sterols
Triterpenes
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT Reproduction, plant
(male sterility; loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(sag12; loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(skp1; loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT Gene, plant

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(xtr9; loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

IT 57-88-5, Cholesterol, biological studies 83-45-4, Sitostanol 83-46-5 83-48-7, Stigmasterol 469-38-5, Cycloartenol 474-60-2, Campestanol 474-62-4, Campesterol 474-63-5, 24-Methylenecholesterol 1637-39-4, trans-Zeatin 6025-53-2, trans-Zeatin riboside 9028-35-7, 3-Hydroxy-3-methylglutaryl coenzyme A reductase 15896-46-5, cis-Zeatin riboside 32771-64-5, cis-Zeatin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)

RE.CNT 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD

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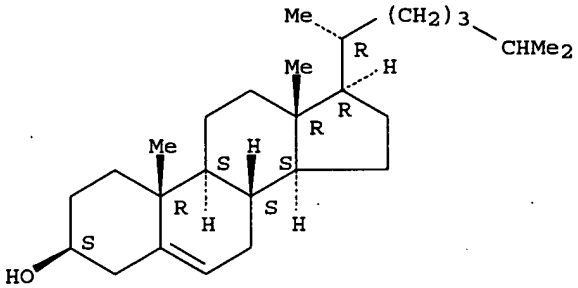
IT 57-88-5, Cholesterol, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(loss of HMG1 function in Arabidopsis leads to dwarfing, early senescence, male sterility and reduced sterol levels)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 5 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:753572 HCAPLUS
DN 138:103720
ED Entered STN: 04 Oct 2002
TI The identification of CVP1 reveals a role for sterols in vascular patterning
AU Carland, Francine M.; Fujioka, Shozo; Takatsuto, Suguru; Yoshida, Shigeo; Nelson, Timothy
CS Department of Molecular, Cellular, Yale University, New Haven, CT, 06511, USA
SO Plant Cell (2002), 14(9), 2045-2058
CODEN: PLCEEW; ISSN: 1040-4651
PB American Society of Plant Biologists
DT Journal
LA English
CC 11-3 (Plant Biochemistry)
AB Vascular cell axialization refers to the uniform alignment of vascular strands. In the Arabidopsis cotyledon vascular pattern1 (cvp1) mutant, vascular cells are not arranged in parallel files and are misshapen, suggesting that CVP1 has a role in promoting vascular cell polarity and alignment. Characterization of an allelic series of cvp1 mutations revealed addnl. functions of CVP1 in organ expansion and elongation. We identified CVP1 and found that it encodes STEROL METHYLTRANSFERASE2 (SMT2), an enzyme in the sterol biosynthetic pathway. SMT2 and the functionally redundant SMT3 act at a branch point in the pathway that mediates sterol and **brassinosteroid** levels. The SMT2 gene is expressed in a number of developing organs and is regulated by various hormones. As predicted from SMT2 enzymic activity, the precursors to **brassinosteroid** are increased at the expense of sterols in cvp1 mutants, identifying a role for sterols in vascular cell polarization and axialization.
ST Arabidopsis cvp1 mutant sterol methyltransferase2 sterol vascular patterning
IT Enzymes, biological studies

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(SMT3; identification of CVP1 reveals a role for sterols in vascular patterning)
IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cvp1; identification of CVP1 reveals a role for sterols in vascular patterning)
IT Arabidopsis thaliana
Molecular cloning
Transformation, genetic
(identification of CVP1 reveals a role for sterols in vascular patterning)
IT Sterols
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(identification of CVP1 reveals a role for sterols in vascular patterning)
IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(smt1; identification of CVP1 reveals a role for sterols in vascular patterning)
IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(smt2; identification of CVP1 reveals a role for sterols in vascular patterning)
IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(smt3; identification of CVP1 reveals a role for sterols in vascular patterning)
IT Plant tissue
(vascular, patterning; identification of CVP1 reveals a role for sterols in vascular patterning)
IT **57-88-5**, Cholesterol, biological studies 77-06-5, Gibberellic acid 80-97-7, Cholestanol 83-45-4, Sitostanol 83-46-5 83-48-7, Stigmasterol 87-51-4, IAA, biological studies 469-38-5, Cycloartenol 469-39-6, Cycloeucalenol 474-40-8, 24-Ethylidenelophenol 474-60-2, Campestanol 474-62-4, Campesterol 474-63-5, 24-Methylenecholesterol 474-68-0, Episterol 481-14-1, Isofucosterol 1175-06-0, 6-Oxocholestanol 1176-52-9, 24-Methylenelophenol 1214-39-7, 6-BA 1449-09-8, 24-Methylenecycloartanol 16910-32-0, Obtusifoliol 22059-21-8, ACC 23290-26-8, Avenasterol 37257-07-1 74635-33-9 **78821-43-9**, **Epibrassinolide** 101046-94-0, 6-Oxositostanol 168113-32-4, 6-Oxocampestanol 198416-73-8, 6-Deoxocathasterone
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(identification of CVP1 reveals a role for sterols in vascular patterning)
RE.CNT 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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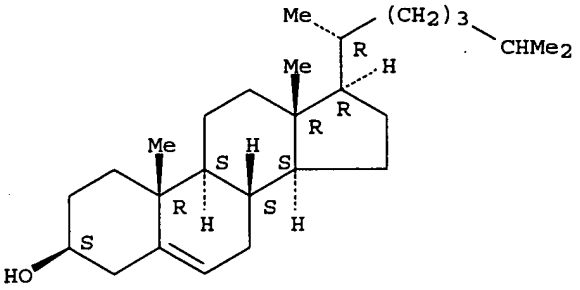
IT **57-88-5**, Cholesterol, biological studies **78821-43-9**, **Epibrassinolide**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(identification of CVP1 reveals a role for sterols in vascular patterning)

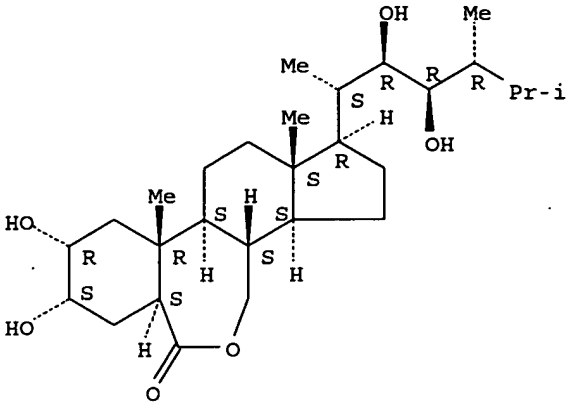
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 78821-43-9 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 6 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:429566 HCAPLUS
DN 137:16565
ED Entered STN: 07 Jun 2002
TI Arabidopsis dwf7 alleles of the STE1 gene defective in the Δ7 sterol C-5 desaturation in **brassinosteroid** biosynthesis
IN Choe, Sunghwa; Feldmann, Kenneth A.
PA USA
SO U.S. Pat. Appl. Publ., 53 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C07H021-02
ICS C07H021-04; A01H005-00
INCL 536023100
CC 3-3 (Biochemical Genetics)
Section cross-reference(s): 7, 10
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002068822	A1	20020606	US 2001-775879	20010202 <--
	US 2004133948	A1	20040708	US 2003-736318	20031215 <--
PRAI	US 2000-179901P	P	20000202 <--		
	US 2001-775879	B3	20010202 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2002068822	ICM	C07H021-02
	ICS	C07H021-04; A01H005-00
	INCL	536023100
US 2002068822	NCL	536/023.100; 800/278.000
	ECLA	C07K014/415; C12N015/82C8; C12N015/82C4B <--
US 2004133948	NCL	800/287.000; 536/023.600
	ECLA	C07K014/415; C12N015/82C4B; C12N015/82C8H4; C12N015/82C8H10 <--

AB Dwarf7 (dwf7) mutants and polypeptides, as well as methods of using the same, are disclosed. The mutation affects **brassinosteroid** biosynthesis and results in a characteristic dwarf phenotypes in plants. The dwf7 polynucleotides can be used in the production of transgenic plants which display at least one dwf7 phenotype, so that the resulting plants have altered structure or morphol. The gene was identified after T-DNA-mediated transposon mutagenesis and complementation anal. of dwarf plants. The dwf7 phenotype was shown to be due to alleles of the STE1 gene. The phenotype of dwf7 plants is typical of **brassinosteroid** -deficient plants but showed impaired fertility rather than sterility.
ST Arabidopsis gene STE lathosterol oxidase sequence; dwf7 allele STE gene

Arabidopsis **brassinosteroid**; dwarf plant **brassinosteroid** biosynthesis STE1 gene allele

IT Gene, plant
RL: AGR (Agricultural use); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); **USES (Uses)**
(STE1; arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT Arabidopsis thaliana
Molecular cloning
(arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT Growth and development, plant
(**brassinosteroid** metabolism and; arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT Alleles
(dwf7-1 and dwf7-2, of STE1 gene; arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT Sterols
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); **USES (Uses)**
(engineering plant content of; arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT Protein sequences
(of STE1 gene product of Arabidopsis; arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT DNA sequences
(of dwf7 alleles of STE1 gene of Arabidopsis; arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT Genetic engineering
(of plant growth and **brassinosteroid** metabolism; arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT 433738-31-9 433738-32-0 433738-33-1 433738-35-3, Protein (Arabidopsis thaliana gene HDF7)
RL: AGR (Agricultural use); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); **USES (Uses)**
(amino acid sequence; arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT 37255-37-1, Δ7 Sterol C5(6) desaturase
RL: AGR (Agricultural use); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); **USES (Uses)**
(arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT 474-63-5, 24-Methylenecholesterol **78821-42-8, Brassinosteroid**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT **57-88-5**, Cholesterol, biological studies
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); **USES (Uses)**
(engineering plant content of; arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT 433738-30-8D, subfragments are claimed 433738-34-2D, subfragments are claimed
RL: AGR (Agricultural use); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); **USES (Uses)**
(nucleotide sequence; arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid**

biosynthesis)

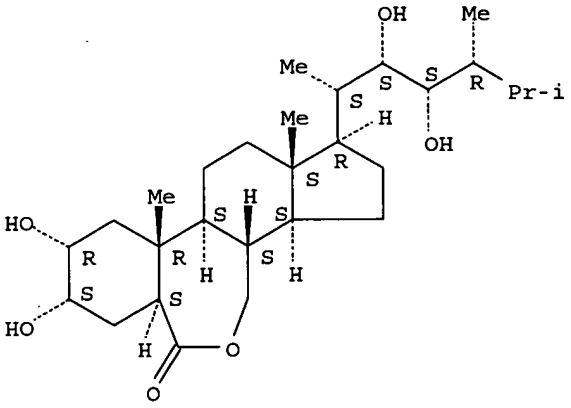
IT 433742-37-1 433742-38-2 433742-39-3 433742-40-6 433742-41-7
433742-42-8 433742-43-9 433742-44-0 433742-45-1 433742-46-2
433742-47-3 433742-48-4 433742-49-5 433742-50-8 433742-56-4
433742-57-5
RL: PRP (Properties)
(unclaimed nucleotide sequence; arabidopsis dwf7 alleles of the STE1 gene defective in the Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT 433742-51-9 433742-52-0 433742-53-1 433742-54-2 433742-55-3
RL: PRP (Properties)
(unclaimed protein sequence; arabidopsis dwf7 alleles of the STE1 gene defective in the Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

IT **78821-42-8, Brassinosteroid**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

RN 78821-42-8 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2S,3S,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

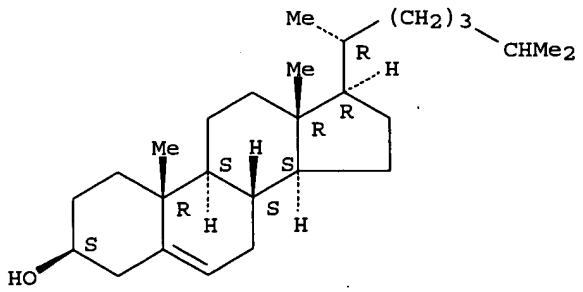
Absolute stereochemistry.



IT **57-88-5**, Cholesterol, biological studies
RL: AGR (Agricultural use); BSU (Biological study, unclassified); BIOL (Biological study); **USES (Uses)**
(engineering plant content of; arabidopsis dwf7 alleles of STE1 gene defective in Δ7 sterol C-5 desatn. in **brassinosteroid** biosynthesis)

RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 7 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:382779 HCAPLUS
DN 137:182381
ED Entered STN: 23 May 2002
TI Biosynthesis of cholestanol in higher plants
AU Nakajima, Naoko; Fujioka, Shozo; Tanaka, Takashi; Takatsuto, Suguru; Yoshida, Shigeo
CS RIKEN (The Institute of Physical and Chemical Research), Wako-shi, Saitama, 351-0198, Japan
SO Phytochemistry (2002), 60(3), 275-279
CODEN: PYTCAS; ISSN: 0031-9422
PB Elsevier Science Ltd.
DT Journal
LA English
CC 11-2 (Plant Biochemistry)
AB To understand the early steps of C27 **brassinosteroid** biosynthesis, metabolic expts. were performed with Arabidopsis thaliana and Nicotiana tabacum seedlings, and with cultured Catharanthus roseus cells. [26, 28-2H6]Campestanol, [26-2H3]cholesterol, and [26-2H3]cholestanol were administered to each plant, and the resulting metabolites were analyzed by gas chromatog.-mass spectrometry. In all the species examined, [2H3]cholestanol was identified as a metabolite of [2H6]campestanol, and [2H3]cholest-4-en-3-one and [2H3]cholestanol were identified as metabolites of [2H3]cholesterol. This study revealed that cholestanol (C27 sterol) was biosynthesized from both cholesterol (C27 sterol) and campestanol (C28 sterol). It was also demonstrated that cholestanol was converted to 6-oxocholestanol, and campestanol was converted to 6-oxocampestanol.
ST plant cholestanol biosynthesis
IT Arabidopsis thaliana
Catharanthus roseus
Nicotiana tabacum
Plant tissue culture
Seedling
(biosynthesis of cholestanol in higher plants)
IT Sterols
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(metabolism of; biosynthesis of cholestanol in higher plants)
IT Metabolic pathways
(proposed; biosynthesis of cholestanol in higher plants)
IT **57-88-5**, Cholesterol, biological studies 80-97-7, Cholestanol 474-60-2, Campestanol 601-57-0, Cholest-4-en-3-one 1175-06-0 168113-32-4, 6-Oxocampestanol
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(biosynthesis of cholestanol in higher plants)
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(3) Fujioka, S; Nat Prod Rep 1997, V14, P1 HCAPLUS
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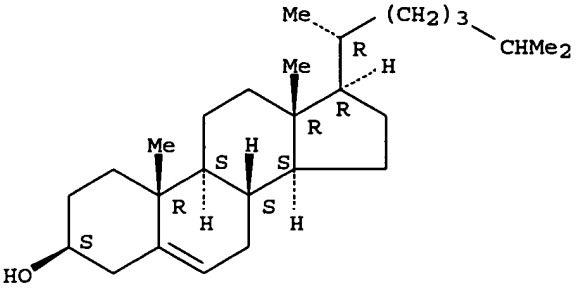
(14) Yokota, T; Phytochemistry 2001, V58, P233 HCAPLUS
IT **57-88-5**, Cholesterol, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(biosynthesis of cholestanol in higher plants)

RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 8 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:387101 HCAPLUS
DN 135:208235
ED Entered STN: 30 May 2001
TI The ratio of campesterol to sitosterol that modulates growth in Arabidopsis is controlled by sterol methyltransferase
AU Schaeffer, Aurelie; Bronner, Roberte; Benveniste, Pierre; Schaller, Hubert
CS Departement Biosynthese et Fonctions des Isoprenoides, Institut de Botanique, Institut de Biologie Moleculaire des Plantes du CNRS, Strasbourg, 67083, Fr.
SO Plant Journal (**2001**), 25(6), 605-615
CODEN: PLJUED; ISSN: 0960-7412
PB Blackwell Science Ltd.
DT Journal
LA English
CC 11-3 (Plant Biochemistry)
Section cross-reference(s): 3, 7
AB The Arabidopsis genome contains three distinct genes encoding sterol-C24-methyltransferases (SMTs) involved in sterol biosynthesis. The expression of one of them, STEROL METHYLTRANSFERASE 2;1, was modulated in 35S::SMT2;1 Arabidopsis in order to study its physiol. function. Plants overexpressing the transgene accumulate sitosterol, a 24-ethylsterol which is thought to be the typical plant membrane reinforcer, at the expense of campesterol. These plants displayed a reduced stature and growth that could be restored by **brassinosteroid** treatment. Plants showing co-suppression of SMT2;1 were characterized by a predominant 24-methylsterol biosynthetic pathway leading to a high campesterol content and a depletion in sitosterol. Pleiotropic effects on development such as reduced growth, increased branching, and low fertility of high-campesterol plants were not modified by exogenous **brassinosteroids**, indicating specific sterol requirements to promote normal development. Thus SMT2;1 has a crucial role in balancing the ratio of campesterol to sitosterol in order to fit both growth requirements and membrane integrity.
ST sterol methyltransferase campesterol sitosterol Arabidopsis growth; sequence sterol methyltransferase Arabidopsis
IT Hormones, plant
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**brassinosteroids**; effect on growth of high-sterol and high-campesterol Arabidopsis)
IT Arabidopsis thaliana
Cell membrane
Growth and development, plant
Protein sequences
Reproduction, plant
cDNA sequences

(ratio of campesterol to sitosterol that modulates growth in Arabidopsis is controlled by sterol methyltransferase)

IT Sitosterols
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(ratio of campesterol to sitosterol that modulates growth in Arabidopsis is controlled by sterol methyltransferase)

IT Transformation, genetic
(sterols and growth of transgenic SMT2;1 Arabidopsis)

IT 302432-88-8
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; ratio of campesterol to sitosterol that modulates growth in Arabidopsis is controlled by sterol methyltransferase)

IT 78821-43-9, 24-Epibrassinolide
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect on growth of high-sterol and high-campesterol Arabidopsis)

IT 273901-10-3, GenBank AF090372
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(nucleotide sequence; ratio of campesterol to sitosterol that modulates growth in Arabidopsis is controlled by sterol methyltransferase)

IT 57-88-5, Cholesterol, biological studies 83-48-7, Stigmasterol 469-38-5, Cycloartenol 474-40-8, 24-Ethylidene lophenol 474-63-5, 24-Methylene cholesterol 474-67-9, Brassicasterol 474-68-0, Episterol 481-14-1, Isofucosterol 521-04-0, Δ7-Sitosterol 1176-52-9, 24-Methylene lophenol 16910-32-0, Obtusifoliol 23290-26-8, Δ7-Avenasterol 124713-05-9, 24-Methylene cycloartenol
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(of transgenic SMT2;1 Arabidopsis)

IT 37257-07-1, Δ24-Sterol methyltransferase
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(ratio of campesterol to sitosterol that modulates growth in Arabidopsis is controlled by sterol methyltransferase)

IT 50936-46-4
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(ratio of campesterol to sitosterol that modulates growth in Arabidopsis is controlled by sterol methyltransferase)

IT 474-62-4, Campesterol
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(ratio of campesterol to sitosterol that modulates growth in Arabidopsis is controlled by sterol methyltransferase)

RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD

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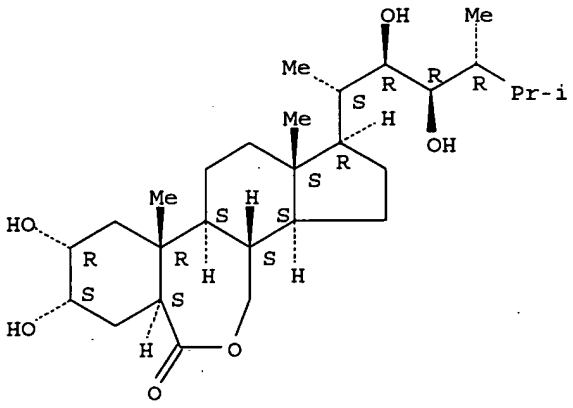
IT **78821-43-9**, 24-**Epibrassinolide**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect on growth of high-sterol and high-campesterol Arabidopsis)

RN 78821-43-9 HCAPLUS

CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

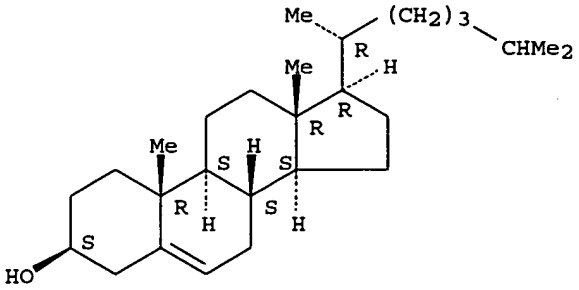
Absolute stereochemistry.



IT **57-88-5**, Cholesterol, biological studies
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC

(Process)
(of transgenic SMT2;1 Arabidopsis)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 9 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:314480 HCAPLUS
DN 135:134684
ED Entered STN: 03 May 2001
TI Accumulation of 6-deoxocathasterone and 6-deoxocastasterone in Arabidopsis, pea and tomato is suggestive of common rate-limiting steps in **brassinosteroid** biosynthesis
AU Nomura, T.; Sato, T.; Bishop, G. J.; Kamiya, Y.; Takatsuto, S.; Yokota, T.
CS Department of Biosciences, Teikyo University, Utsunomiya, 320-8551, Japan
SO Phytochemistry (2001), 57(2), 171-178
CODEN: PYTCAS; ISSN: 0031-9422
PB Elsevier Science Ltd.
DT Journal
LA English
CC 11-2 (Plant Biochemistry)
AB To gain a better understanding of **brassinosteroid** biosynthesis, the levels of **brassinosteroids** and sterols related to **brassinolide** biosynthesis in Arabidopsis, pea, and tomato plants were quantified by gas chromatog.-selected ion monitoring. In these plants, the late C-6 oxidation pathway was found to be the predominant pathway in the synthesis of castasterone. Furthermore, all these plant species had similar BR profiles, suggesting the presence of common biosynthetic control mechanisms. The especially high levels of 6-deoxocathasterone and 6-deoxocastasterone may indicate that their resp. conversions to 6-deoxoteasterone and castasterone are regulated in planta and hence are important rate-limiting steps in **brassinosteroid** biosynthesis. Other possible rate-limiting reactions, including the conversion of campestanol to 6-deoxocathasterone, are also discussed. Tomato differs from Arabidopsis and pea in that tomato contains 28-norcastasterone as a biol. active **brassinosteroid**, and that its putative precursors, cholesterol and its relatives are the major sterols.
ST deoxocathasteonre deoxocastasterone **brassinosteroid** formation Arabidopsis Pisum Lycopersicon
IT Arabidopsis thaliana
Pea
Tomato
(accumulation of 6-deoxocathasterone and 6-deoxocastasterone in Arabidopsis, pea and tomato in **brassinosteroid** biosynthesis in relation to rate-limiting steps)
IT Hormones, plant
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(**brassinosteroids**; accumulation of 6-deoxocathasterone and 6-deoxocastasterone in Arabidopsis, pea and tomato in

brassinosteroid biosynthesis in relation to rate-limiting steps)

IT Sterols
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(of Arabidopsis, pea and tomato in **brassinosteroid** biosynthesis)

IT 87833-54-3, 6-Deoxocastasterone 198416-73-8, 6-Deoxocathasterone
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(accumulation of 6-deoxocathasterone and 6-deoxocastasterone in Arabidopsis, pea and tomato in **brassinosteroid** biosynthesis in relation to rate-limiting steps)

IT **57-88-5**, Cholesterol, biological studies 80-97-7, Cholestanol 80-99-9, Lathosterol 83-45-4, β-Sitostanol 83-46-5, β-Sitosterol 83-48-7, Stigmasterol 474-60-2, Campestanol 474-62-4, Campesterol 474-63-5, 24-Methylenecholesterol 481-14-1, Isofucosterol 481-25-4, Lophenol 4651-51-8, 24-Epicampesterol 6538-02-9 **72962-43-7, Brassinolide** 80736-41-0, Castasterone 83464-85-1, 28-Norcastasterone 87734-68-7, Typhasterol 92751-21-8, Teasterone 124853-28-7, 3-Dehydroteasterone 164034-47-3, 6-Deoxotyphasterol 164034-48-4, 3-Dehydro-6-deoxoteasterone 168069-61-2 168113-32-4, 6-Oxocampestanol 168146-23-4, Cathasterone 188397-19-5, 6-Deoxoteasterone 220566-70-1
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(of Arabidopsis, pea and tomato in **brassinosteroid** biosynthesis)

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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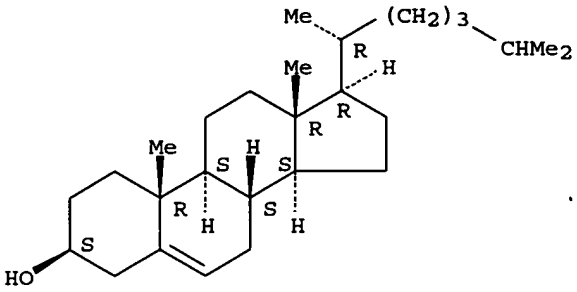
IT **57-88-5**, Cholesterol, biological studies **72962-43-7, Brassinolide**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(of Arabidopsis, pea and tomato in **brassinosteroid** biosynthesis)

RN 57-88-5 HCAPLUS

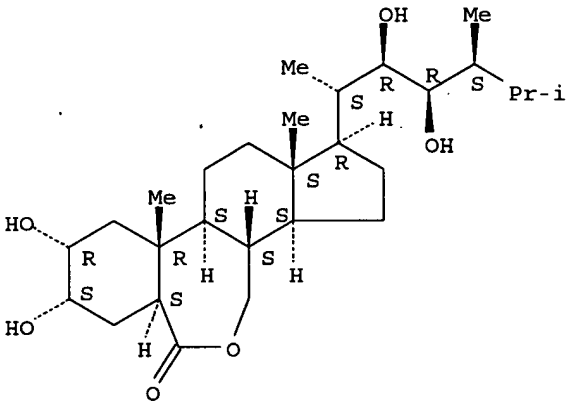
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 72962-43-7 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 10 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:250981 HCAPLUS
DN 135:89935
ED Entered STN: 10 Apr 2001
TI **Brassinosteroids**, microtubules and cell elongation in Arabidopsis thaliana. I. Molecular, cellular and physiological characterization of the Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desaturation step leading to **brassinosteroid** biosynthesis
AU Catterou, Manuella; Dubois, Frederic; Schaller, Hubert; Aubanelle, Laurent; Vilcot, Beate; Sangwan-Norreel, Brigitte S.; Sangwan, Rajbir S.
CS Laboratoire Androgenese et Biotechnologie, Faculte des Sciences, Universite de Picardie Jules Verne, Amiens, 80039, Fr.
SO Planta (2001), 212(5-6), 659-672
CODEN: PLANAB; ISSN: 0032-0935
PB Springer-Verlag
DT Journal
LA English
CC 11-3 (Plant Biochemistry)
AB Although cell elongation is a basic function of plant morphogenesis, many of the mol. events involved in this process are still unknown. In this work an extremely dwarf mutant, originally named bul, was used to study one of the main processes of plant development, cell elongation. Genetic

analyses revealed that the BUL locus was linked to the nga172 marker on chromosome 3. Recently, after mapping the new dwf7 mutation of Arabidopsis, which is allelic to ste1, it was reported that dwf7 is also linked to the same marker. Sterol analyses of the bul1-1 mutant indicated that bul1-1 is defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid** biosynthesis. Considering these findings, we designated our bul mutant as bul1-1/dwf7-3/ste1-4. The bul1-1 mutant was characterized by a very dwarf phenotype, with delayed development and reduced fertility. The mutant leaves had a dark-green color, which was probably due to continuous stomatal closure. The bul1-1 mutant showed a partially de-etiolated phenotype in the dark. Cellular characterization and rescue expts. with **brassinosteroids** demonstrated the involvement of the BUL1-1 protein in **brassinosteroid**-dependent plant growth processes.

ST Arabidopsis **brassinosteroid** biosynthesis dwarf mutant

IT Arabidopsis thaliana
Leaf
Seedling
(Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

IT Proteins, specific or class
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(BUL1-1; Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

IT Root
(apex; Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

IT Phenotypes
(bul1-1/dwf7-3/ste1-4; Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

IT Gene, plant
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(bul1; Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

IT Growth and development, plant
(dwarfism; Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

IT Gene, plant
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(dwf7; Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

IT Growth and development, plant
(morphogenesis; Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

IT Growth and development, plant
(root; Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

IT Gene, plant
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(ste1; Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

IT **57-88-5**, Cholesterol, biological studies 80-99-9, Δ7-Cholestenol 83-46-5 83-48-7, Stigmasterol 469-38-5, Cycloartenol 474-40-8, 24-Ethylidene lophenol 474-62-4, Campesterol 474-63-5, 24-Methylene cholesterol 474-67-9, Brassicasterol 474-68-0, Episterol 481-14-1, Isofucosterol 481-18-5 516-78-9, Δ7-Campestenol 1176-52-9, 24-Methylene lophenol 1912-66-9, Pollinastanol 5259-28-9 6869-99-4 16910-32-0, Obtusifoliol 17608-76-3, Δ7,22-Ergostadienol 20780-37-4 23290-26-8, Δ7-Avenasterol 108942-93-4 124713-05-9, 24-Methylene cycloartenol
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); MFM

(Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD

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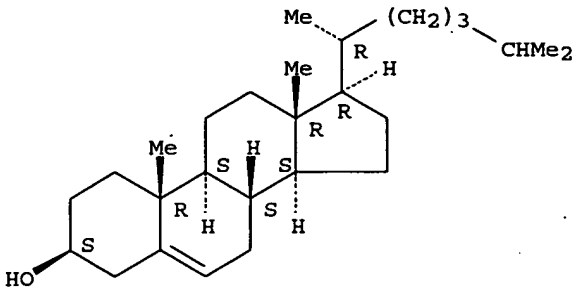
IT **57-88-5**, Cholesterol, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(Arabidopsis bul1 mutant, defective in the Δ7-sterol-C5-desatn. step leading to **brassinosteroid**)

RN 57-88-5 HCAPLUS

CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 11 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:516729 HCAPLUS
DN 134:2734
ED Entered STN: 31 Jul 2000
TI Tissue-specific induction of the mRNA for an extracellular invertase isoenzyme of tomato by **brassinosteroids** suggests a role for steroid hormones in assimilate partitioning
AU Goetz, Marc; Godt, Dietmute E.; Roitsch, Thomas
CS Institut fur Zellbiologie und Pflanzenphysiologie, Universitat Regensburg, Regensburg, 93053, Germany
SO Plant Journal (2000), 22(6), 515-522
CODEN: PLJUED; ISSN: 0960-7412
PB Blackwell Science Ltd.
DT Journal
LA English
CC 11-4 (Plant Biochemistry)
AB **Brassinosteroids** (BRs) induce various growth responses when applied exogenously to plant tissues, and the anal. of biosynthetic mutants reveals an essential role for plant growth and development. Only a few BR-regulated genes have been identified so far, and the corresponding gene products are assumed to be involved in cell elongation. The present study shows that BR growth responses are linked to the regulation of carbohydrate metabolism by induction of the mRNA for the key enzyme of an apoplastic phloem-unloading pathway. Addition of BRs to autotrophic tomato suspension culture cells specifically elevates the activity of cell-wall-bound invertase, whereas the intracellular invertase activities were not affected. This enhanced enzyme activity was shown to correlate with the induction of the mRNA of extracellular invertase Lin6, whereas the mRNA levels of the other three extracellular invertase isoenzymes were not affected. The induction level induced by different BRs correlates with their growth-promoting activity. The physiol. significance of this regulation is further supported by the low concns. and short incubation times required to induce Lin6 mRNA. This regulatory mechanism results in an elevated uptake of sucrose via the hexose monomers, and thus an increased supply of to the BR-treated cells. Expts. with tomato seedlings showed that the localized BR-dependent growth response of the hypocotyl elongation zone was accompanied by a specific induction of Lin6 mRNA that is restricted to the corresponding tissues. This study demonstrates a role of BRs in tissue-specific source/sink regulation.
ST **brassinosteroid** induction invertase gene tomato
IT Gene, plant
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(Lin6; tissue-specific induction of mRNA for extracellular invertase isoenzyme of tomato by **brassinosteroids** and role for steroid hormones in assimilate partitioning)
IT Hormones, plant
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(**brassinosteroids**; tissue-specific induction of mRNA for invertase isoenzyme of tomato by **brassinosteroids** and role

for steroid hormones in assimilate partitioning)
IT Tomato
(tissue-specific induction of mRNA for extracellular invertase isoenzyme of tomato by **brassinosteroids** and role for steroid hormones in assimilate partitioning)
IT 50-28-2, β-Estradiol, biological studies **57-88-5**, Cholesterol, biological studies 83-48-7, Stigmasterol **72962-43-7**, **Brassinolide 78821-43-9**, 24-epi-**Brassinolide** 82373-95-3, 28-Homo-**Brassinolide**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(tissue-specific induction of mRNA for extracellular invertase isoenzyme of tomato by **brassinosteroids** and role for steroid hormones in assimilate partitioning)
IT 9001-57-4D, Invertase, isoenzymes
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(tissue-specific induction of mRNA for extracellular invertase isoenzyme of tomato by **brassinosteroids** and role for steroid hormones in assimilate partitioning)
IT 57-50-1, Sucrose, biological studies
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(tissue-specific induction of mRNA for extracellular invertase isoenzyme of tomato by **brassinosteroids** and role for steroid hormones in assimilate partitioning)
RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD
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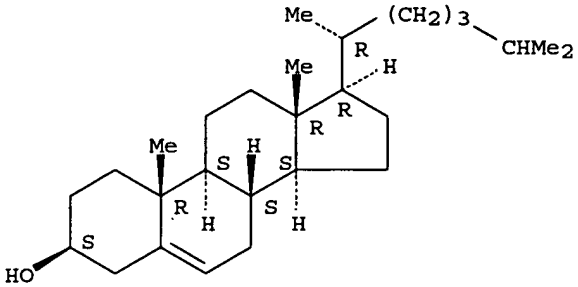
IT 57-88-5, Cholesterol, biological studies **72962-43-7**, **Brassinolide 78821-43-9**, 24-epi-**Brassinolide**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(tissue-specific induction of mRNA for extracellular invertase isoenzyme of tomato by **brassinosteroids** and role for steroid hormones in assimilate partitioning)

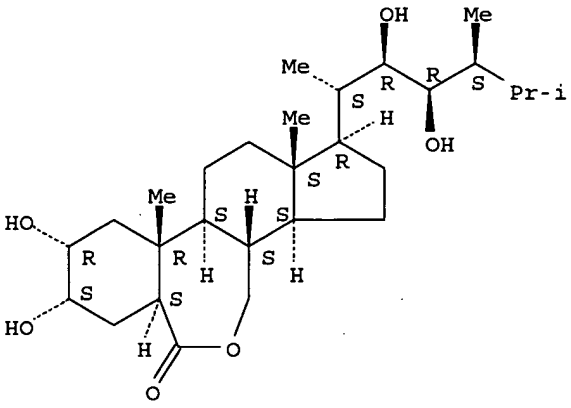
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



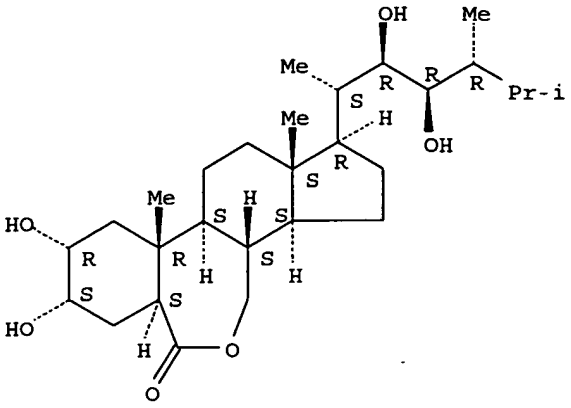
RN 72962-43-7 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 78821-43-9 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 12 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:411753 HCAPLUS
DN 133:164205
ED Entered STN: 21 Jun 2000
TI 13C NMR spectra of sterol derivatives, intermediates in the synthesis of ecdy- and **brassinosteroids**
AU Kovganko, N. V.; Kashkan, Zh. N.; Borisov, E. V.
CS Institute of Bioorganic Chemistry of the National Academy of Sciences of Belarus, Minsk, 220141, Belarus
SO Chemistry of Natural Compounds (Translation of Khimiya Prirodnykh Soedinenii) (2000), Volume Date 1999, 35(6), 642-645
CODEN: CHNCA8; ISSN: 0009-3130
PB Consultants Bureau
DT Journal
LA English
CC 32-7 (Steroids)
Section cross-reference(s): 22
AB The 13C NMR spectra of a series of steroids used to synthesize ecdy- and **brassinosteroids** are studied.
ST sterol NMR carbon 13 ecdysteroid **brassinosteroid** intermediate
IT Hormones, plant
RL: PRP (Properties)
(**brassinosteroids**; 13C NMR spectra of sterol derivs., intermediates in the synthesis of ecdy- and **brassinosteroids**)
IT NMR spectroscopy
(carbon-13; of sterol derivs., intermediates in the synthesis of ecdy- and **brassinosteroids**)
IT Ecdysteroids
Sitosterols
RL: PRP (Properties)
(13C NMR spectra of sterol derivs., intermediates in the synthesis of ecdy- and **brassinosteroids**)
IT **57-88-5**, Cholesterol, properties 83-46-5, β-Sitosterol
83-48-7, Stigmasterol 7674-79-5 24116-49-2, Cholesta-2,4-dien-6-one
63866-18-2 63866-20-6 74174-45-1 74174-49-5 101046-96-2
136319-13-6 136319-14-7 136319-22-7 288098-09-9
RL: PRP (Properties)
(13C NMR spectra of sterol derivs., intermediates in the synthesis of ecdy- and **brassinosteroids**)
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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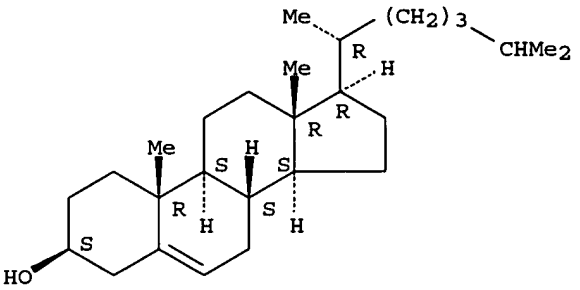
IT 57-88-5, Cholesterol, properties
RL: PRP (Properties)
(13C NMR spectra of sterol derivs., intermediates in the synthesis of ecdy- and **brassinosteroids**)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 13 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:219787 HCAPLUS
DN 133:161781
ED Entered STN: 06 Apr 2000
TI 24-Epi-castasterone and phytosterols from seeds of Maytenus boaria (Celastraceae)
AU Franke, Katrin; Kuhnt, Cristine; Schmidt, Jurgen; Munoz, Orlando
CS Institute of Plant Biochemistry, Halles, D-06120, Germany
SO Revista Latinoamericana de Quimica (1999), 27(3), 111-115
CODEN: RLAQA8; ISSN: 0370-5943
PB Laboratorios Mixim S.A de C.V.
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
AB The **brassinosteroid** 24-epi-castasterone was identified in seeds of Maytenus boaria (Celastraceae) by GC-EIMS on the base of its Kovats retention index in comparison with an authentic sample. The phytosterol pattern of the same plant material indicated sitosterol as the main component.
ST epicastasterone phytosterol Maytenus
IT Maytenus boaria
(24-Epi-castasterone and phytosterols from seeds of)
IT Sterols
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(from seeds of Maytenus boaria)
IT 57-88-5, Cholesterol, biological studies 83-45-4, Sitostanol 83-46-5, β-Sitosterol 83-48-7, Stigmasterol 474-62-4, Campesterol 481-14-1, Isofucosterol 4651-51-8, 22,23-Dihydrobrassicasterol

72050-71-6, 24-Epi-Castasterone
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(from seeds of Maytenus boaria)
RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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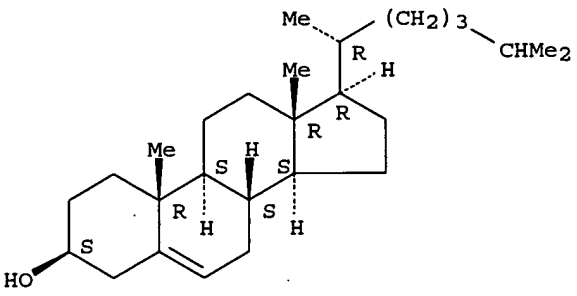
(20) Yokota, T; Phytochemistry 1987, V26, P503 HCAPLUS
IT 57-88-5, Cholesterol, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(from seeds of Maytenus boaria)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 14 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:98194 HCAPLUS
DN 132:133614
ED Entered STN: 11 Feb 2000
TI Agents containing sugar- or sugar alcohol-type surfactants and other substances for preserving the freshness of cut flowers and vegetables
IN Suzuki, Tadayuki; Kamei, Masatoshi; Hayashi, Masaharu; Kurita, Kazuhiko
PA Kao Corporation, Japan
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM A01N003-02
CC 5-3 (Agrochemical Bioregulators)
Section cross-reference(s): 17
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000005946	A1	20000210	WO 1999-JP4080	19990729
	W: US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	JP 2000044401	A2	20000215	JP 1998-214106	19980729
	JP 2000169302	A2	20000620	JP 1998-349965	19981209
	JP 2000103701	A2	20000411	JP 1999-215861	19990729
	JP 3537711	B2	20040614		
	EP 1101402	A1	20010523	EP 1999-933160	19990729
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	JP 1998-214105	A	19980729		
	JP 1998-214106	A	19980729		
	JP 1998-349965	A	19981209		
	WO 1999-JP4080	W	19990729		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000005946	ICM	A01N003-02
WO 2000005946	ECLA	A01N003/02
EP 1101402	ECLA	A01N003/02

AB Highly safe agents for preserving the freshness of harvested plants such as cut flowers and vegetables comprise a sugar- or sugar alc.-type surfactant together with ≥1 substance selected from among sugars, plant hormones, antioxidants, colloidal particle flocculating/precipitating agents, and microbicides and preservatives, preferably at a sp. weight ratio. Thus, cut flowers (carnation, chrysanthemum, and rose) treated with an agent containing 100 ppm sucrose fatty acid ester and 2.0% glucose lasted 10-12 days, whereas flowers treated with 2.0% glucose alone lasted 5-6 days and flowers in water lasted 3-5 days.

ST preservative cut flower vegetable sugar surfactant

IT Cut flower preservation
(agents containing sugar- or sugar alc.-type surfactants and other substances for)

IT Precipitation (chemical)
(agents; preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

IT Glycosides
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(alkyl polyglycosides; preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

IT Hormones, plant
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); **FFD (Food or feed use)**; BIOL (Biological study); USES (Uses)
(**brassinosteroids**; preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

IT Food preservatives
(containing sugar- or sugar alc.-type surfactants and other substances)

IT Preservatives
(containing sugar- or sugar alc.-type surfactants and other substances for keeping harvested plants fresh)

IT Alditols
Fatty acids, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(esters; preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

IT Amides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological

study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(fatty; preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

IT Oligosaccharides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(fructose-lactose-containing; preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

IT Antimicrobial agents
Antioxidants
Carnation (Dianthus)
Chinese cabbage
Chrysanthemum
Rose (Rosa)
Spinach (Spinacia oleracea)
Surfactants
Vegetable
(preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

IT Auxins
Carbohydrates, biological studies
Cytokinins
Gibberellins
Hormones, plant
Polysaccharides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

IT Carbohydrates, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(sugar esters; preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

IT Amides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(sugar; preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

IT 9012-76-4, Chitosan 10043-01-3, Aluminum sulfate 10043-52-4, Calcium chloride, uses 147014-67-3, Kurifloc LC 541
RL: NUU (Other use, unclassified); USES (Uses)
(precipitation agent; preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

IT 50-70-4, Sorbitol, biological studies 50-99-7, D-Glucose, biological studies 57-48-7, Fructose, biological studies 57-50-1, Sucrose, biological studies 57-50-1D, Sucrose, fatty acid esters 59-23-4, Galactose, biological studies 62-57-7, Aminoisobutyric acid 77-06-5, Gibberellic acid 94-75-7, 2,4-D, biological studies 99-20-7, Trehalose 148-24-3, 8-Hydroxyquinoline, biological studies 525-79-1, Kinetin 1330-43-4, Sodium tetraborate 1338-39-2, Rheodol SP-L 10 7173-51-5, Didecyldimethylammonium chloride 13073-35-3, Ethionine 23149-52-2, Silver thiosulfate 25339-99-5, DK Ester SL 18A 49669-74-1 73904-70-8, Proxel 257285-60-2, Maidooru 10
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(preservatives for cut flowers and vegetables containing sugar- or sugar alc.-type surfactants and other substances)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Abbott Laboratories; US 5500403 A HCAPLUS
(2) Abbott Laboratories; AU 699897 B HCAPLUS
(3) Abbott Laboratories; EP 765114 A1 HCAPLUS
(4) Abbott Laboratories; WO 9534199 A1 HCAPLUS
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(6) Abbott Laboratories; JP 10501553 A 1998
(7) Asahi Optical Co Ltd; JP 07187902 A 1995 HCAPLUS
(8) British Technology Group Ltd; ES 2113647 T3 HCAPLUS
(9) British Technology Group Ltd; AU 693092 B HCAPLUS
(10) British Technology Group Ltd; DE 69408664 A1
(11) British Technology Group Ltd; EP 696167 A1 HCAPLUS
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L41 ANSWER 15 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:38847 HCAPLUS
DN 132:205474
ED Entered STN: 18 Jan 2000
TI 24-Epi-secasterone and 24-epi-castasterone from Lychnis viscaria seeds
AU Friebe, Annette; Volz, Andreas; Schmidt, Jurgen; Voigt, Brunhilde; Adam, Gunter; Schnabl, Heide
CS Institute of Agricultural Botany, University of Bonn, Bonn, D-53115, Germany
SO Phytochemistry (1999), 52(8), 1607-1610
CODEN: PYTCAS; ISSN: 0031-9422
PB Elsevier Science Ltd.
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
Section cross-reference(s): 32
AB The **brassinosteroids** 24-epi-castasterone and the hitherto unknown (22R, 23R, 24R)-22,23-dihydroxy-2β,3β-epoxy-24-methyl-5α-cholestan-6-one (24-epi-secasterone) could be identified from seeds of Lychnis viscaria (Caryophyllaceae). In the phytosterol fraction of the same plant material spinasterol was found as the main component.
ST sterol Lychnis; secasterone Lychnis; castasterone Lychnis; spinasterol Lychnis
IT Sterols
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process)
(isolation from Lychnis)
IT Lychnis viscaria
(isolation of secasterone and castasterone)
IT Steroids, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process)
(oxo; isolation of secasterone and castasterone from Lychnis)
IT New natural products
(secasterone from Lychnis)
IT 72050-71-6P, 24-epi-Castasterone 167075-97-0P, 24-epi-Secasterone
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process)
(isolation and structure from Lychnis)
IT **57-88-5P**, Cholesterol, biological studies 83-45-4P, Sitostanol 83-46-5P 83-48-7P, Stigmasterol 474-60-2P, Campestanol 474-62-4P, Campesterol 474-67-9P, 24-Methylcholesta-5,22-dien-3β-ol 481-18-5P, Spinasterol 17105-75-8P, 24-Methylcholest-7-en-3β-ol

25163-48-8P, Stigmast-22-en-3β-ol 41388-21-0P 117598-82-0P
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process)
(isolation from Lychnis)
RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
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(21) Yokota, T; Phytochemistry 1987, V26, P503 HCAPLUS
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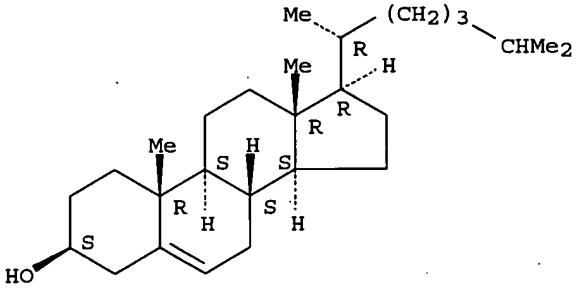
IT **57-88-5P**, Cholesterol, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process)
(isolation from Lychnis)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 16 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:258625 HCAPLUS
DN 131:56508
ED Entered STN: 28 Apr 1999
TI **Brassinosteroid**/sterol synthesis and plant growth as affected by lka and lkb mutations of pea
AU Nomura, Takahito; Kitasaka, Yukiko; Takatsuto, Suguru; Reid, James B.; Fukami, Motohiro; Yokota, Takao
CS Department of the Science of Plant and Animal Production, Tokyo University of Agriculture and Technology, Tokyo, 183-8509, Japan

SO Plant Physiology (1999), 119(4), 1517-1526
CODEN: PLPHAY; ISSN: 0032-0889
PB American Society of Plant Physiologists
DT Journal
LA English
CC 11-3 (Plant Biochemistry)
AB The dwarf pea (Pisum sativum) mutants lka and lkb are **brassinosteroid** (BR) insensitive and deficient, resp. The dwarf phenotype of the lkb mutant was rescued to wild type by exogenous application of **brassinolide** and its biosynthetic precursors. Gas chromatog.-mass spectrometry anal. of the endogenous sterols in this mutant revealed that it accumulates 24-methylenecholesterol and isofucosterol but is deficient in their hydrogenated products, campesterol and sitosterol. Feeding expts. using 2H-labeled 24-methylenecholesterol indicated that the lkb mutant is unable to isomerize and/or reduce the Δ24(2B) double bond. Dwarfism of the lkb mutant is, therefore, due to BR deficiency caused by blocked synthesis of campesterol from 24-methylenecholesterol. The lkb mutation also disrupted sterol composition of the membranes, which, in contrast to those of the wild type, contained isofucosterol as the major sterol and lacked stigmasterol. The lka mutant was not BR deficient, because it accumulated castasterone. Like some gibberellin-insensitive dwarf mutants, overprodn. of castasterone in the lka mutant may be ascribed to the lack of a feedback control mechanism due to impaired perception/signal transduction of BRs. The possibility that castasterone is a biol. active BR is discussed.
ST pea dwarfism **brassinosteroid** formation mutant; sterol pea membrane dwarf mutant
IT Metabolism, plant
Pea
(**brassinosteroid** and sterol synthesis and plant growth as affected by lka and lkb mutations of pea)
IT Hormones, plant
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(**brassinosteroids**; formation of **brassinosteroids** and sterols, growth of pea lka and lkb mutants, and effect of **brassinolide** and precursors)
IT Growth and development, plant
(dwarfism; **brassinosteroid** and sterol formation, growth of pea lka and lkb mutants, and effect of **brassinolide** and precursors)
IT Sterols
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(formation and distribution in pea lka and lkb mutants and effect of **brassinolide** and precursors)
IT Gene, plant
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(lka and lkb; **brassinosteroid** and sterol formation and growth of pea lka and lkb mutants)
IT Membrane, biological
(sterol composition of membranes response to lkb mutation in pea)
IT 80736-41-0, Castasterone
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(**brassinosteroid** and sterol synthesis and plant growth of pea lka and lkb mutants and effect of **brassinolide** and precursors)
IT 87734-68-7, Typhasterol 87833-54-3, 6-Deoxocastasterone 92751-21-8, Teasterone 124853-28-7, 3-Dehydroteasterone 164034-47-3, 6-Deoxotyphasterol 164034-48-4 188397-19-5, 6-Deoxoteasterone

RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(formation of **brassinosteroids**, growth of pea lka and lkb mutants, and effect of **brassinolide** and precursors)

IT **72962-43-7, Brassinolide**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(pea lka and lkb mutants response to)

IT **57-88-5**, Cholesterol, biological studies 83-45-4, Sitostanol 83-46-5, β-Sitosterol 4651-51-8, 24-Epicampesterol 6538-02-9, 24-Epicampestanol
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(sterol formation and distribution in pea lka and lkb mutants)

IT 474-60-2, Campestanol 474-62-4, Campesterol
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(sterol formation and distribution in pea lka and lkb mutants and effect of **brassinolide** and precursors)

IT 474-63-5, 24-Methylenecholesterol 481-14-1, Isofucosterol
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PROC (Process)
(sterol formation and distribution in pea lka and lkb mutants and effect of **brassinolide** and precursors)

IT 83-48-7, Stigmasterol
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(sterol formation and distribution in pea lka and lkb mutants and effect of **brassinolide** and precursors)

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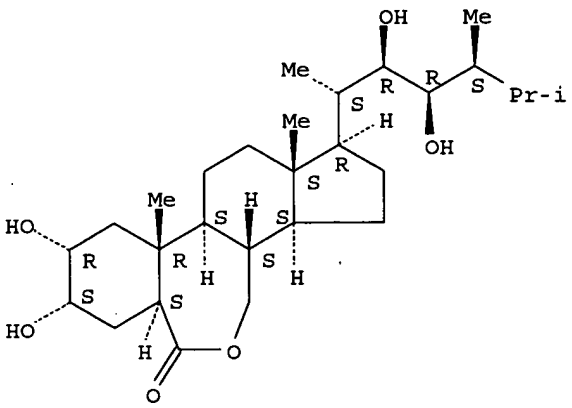
IT **72962-43-7, Brassinolide**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(pea 1ka and 1kb mutants response to)

RN 72962-43-7 HCAPLUS

CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

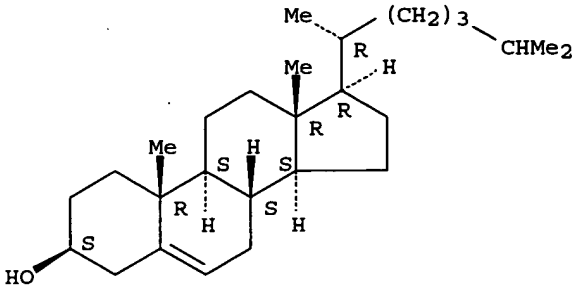
Absolute stereochemistry.



IT **57-88-5**, Cholesterol, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)
(sterol formation and distribution in pea 1ka and 1kb mutants)

RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 17 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1998:831 HCAPLUS
DN 128:125844
ED Entered STN: 02 Jan 1998
TI Identification of teasterone and phytosterols in the lipid fraction from seeds of Cannabis sativa L
AU Takatsuto, Suguru; Kawashima, Takahiro; Noguchi, Takahiro; Fujioka, Shozo; Sakurai, Akira
CS Dep. Chem., Joetsu Univ. Education, Joetsu, 943, Japan
SO Nihon Yukagakkaishi (**1997**), 46(12), 1499-1504
CODEN: NIYUFC; ISSN: 1341-8327
PB Nihon Yukagaku Gakkai
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
AB **Brassinosteroids** and phytosterols in unsaponifiable lipid obtained from the seeds of Cannabis sativa L. were studied. Bioactive substances in a rice-lamina inclination test were highly purified, derivatized and analyzed by GC-MS. The **brassinosteroid** teasterone was identified, suggesting for the first time its possible presence as a fatty acid ester in dicot plants. The seeds were found to contain six phytosterols, cholesterol, campesterol, campestanol, stigmasterol, sitosterol and sitostanol, with sitosterol and campesterol present in the largest amts. Campestanol and sitostanol were identified in the seeds for the first time. The structural relationship between **brassinosteroids** and phytosterols in the seeds is discussed from a biosynthetic point of view.
ST Cannabis seed teasterone phytosterol; **brassinosteroid** Cannabis seed
IT Hormones, plant
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(**brassinosteroids**; of Cannabis sativa seeds)
IT Sterols
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(phytosterols; of Cannabis sativa seeds)
IT **57-88-5**, Cholesterol, biological studies 83-45-4, Sitostanol 83-46-5, β-Sitosterol 83-48-7, Stigmasterol 474-60-2, Campestanol 474-62-4, Campesterol 92751-21-8D, Teasterone, esters
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(of Cannabis sativa seeds)
RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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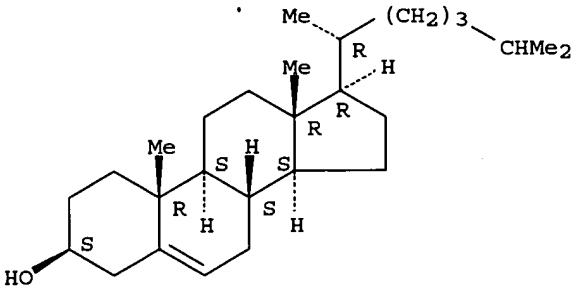
IT **57-88-5**, Cholesterol, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(of Cannabis sativa seeds)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 18 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1997:751941 HCAPLUS
DN 128:45890
ED Entered STN: 03 Dec 1997
TI Identification of **brassinosteroids** that appear to be derived from campesterol and cholesterol in tomato shoots
AU Yokota, Takao; Nomura, Takahito; Nakayama, Masayoshi
CS Department of Biosciences, School of Science and Engineering, Teikyo University, Tochigi, 320, Japan
SO Plant and Cell Physiology (**1997**), 38(11), 1291-1294
CODEN: PCPHA5; ISSN: 0032-0781
PB Japanese Society of Plant Physiologists
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
AB To obtain information about the biosynthesis of **brassinosteroids** (BRs) in tomato shoots, endogenous BRs were examined by gas chromatog.-mass spectrometry. Two C28 BRs, namely, castasterone and 6-deoxocastasterone, and a C27 BR, 28-norcastasterone, were identified. Findings suggest that the major BRs in tomato are derived from campesterol and cholesterol.
ST tomato **brassinosteroid** campesterol cholesterol

IT Tomato
(**brassinosteroids** that appear to be derived from campesterol and cholesterol in tomato shoots)
IT Hormones, plant
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(**brassinosteroids**; **brassinosteroids** that appear to be derived from campesterol and cholesterol in tomato shoots)
IT 80736-41-0, Castasterone 83464-85-1, 28-Norcastasterone 87833-54-3, 6-Deoxocastasterone
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(**brassinosteroids** that appear to be derived from campesterol and cholesterol in tomato shoots)
IT **57-88-5**, Cholesterol, biological studies 474-62-4, Campesterol
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**brassinosteroids** that appear to be derived from campesterol and cholesterol in tomato shoots)
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
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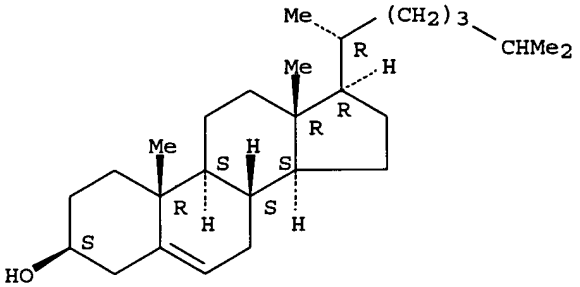
(12) Yokota, T; Phytochemistry 1996, V42, P509 HCAPLUS
(13) Yokota, T; Trend Plant Sci 1997, V2, P137
IT **57-88-5**, Cholesterol, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**brassinosteroids** that appear to be derived from campesterol and cholesterol in tomato shoots)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

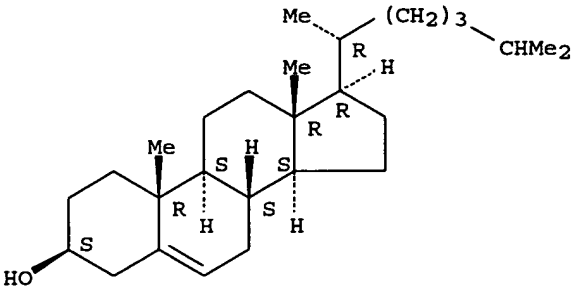
Absolute stereochemistry.



L41 ANSWER 19 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1997:287781 HCAPLUS
DN 127:15415
ED Entered STN: 07 May 1997
TI Composition of phytosterols in the pollen of Robinia pseudo-acacia L
AU Takatsuto, Suguru
CS Dep. Chem., Joetsu Univ. Education, Joetsu, Niigata, 943, Japan
SO Nihon Yukagakkaishi (**1997**), 46(4), 419-421
CODEN: NIYUFC; ISSN: 1341-8327
PB Nihon Yukagaku Gakkai

DT Journal
LA English
CC 11-1 (Plant Biochemistry)
Section cross-reference(s): 32
AB Determination was made of the compns. of phytosterols in Robinia pseudo-acacia L. pollen. The n-hexane-soluble fraction obtained from the methanol extract of the pollen was saponified and the unsaponifiable lipid was purified by preparative thin layer chromatog. to afford phytosterols. These were derivatized as trimethylsilyl ether and analyzed by GC and GC-MS. The major sterols were 24-methylenecholesterol, 24-methyldesmosterol, isofucosterol and sitosterol and minor sterols cholesterol, campesterol and 23-dehydrositosterol. The structural relationships between phytosterols and **brassinosteroids** are discussed.
ST phytosterol pollen Robinia
IT Hormones, plant
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(**brassinosteroids**; structural relationships between phytosterols and)
IT Black locust (Robinia pseudoacacia)
(phytosterols in the pollen of Robinia pseudo-acacia L.)
IT Sterols
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(phytosterols in the pollen of Robinia pseudo-acacia L.)
IT **57-88-5P**, Cholesterol, biological studies 83-46-5P 474-62-4P, Campesterol 474-63-5P, 24-Methylenecholesterol 481-14-1P, Isofucosterol 20780-41-0P, 24-Methyldesmosterol 38485-29-9P, 23-Dehydrositosterol
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(phytosterols in the pollen of Robinia pseudo-acacia L.)
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Abe, H; Biosci Biotech Biochem 1995, V59, P309 HCAPLUS
(2) Choi, Y; Phytochemistry 1996, V43, P593 HCAPLUS
(3) Fujioka, S; Chem Regul Plants 1995, V30, P137 HCAPLUS
(4) Itoh, T; J Jpn Oil Chem Soc 1978, V27, P745 HCAPLUS
(5) Sakurai, A; Plant Growth Regul 1993, V13, P147 HCAPLUS
(6) Suzuki, H; Biosci Biotech Biochem 1995, V59, P168 HCAPLUS
(7) Suzuki, H; J Plant Growth Regul 1994, V13, P21 HCAPLUS
(8) Suzuki, H; Phytochemistry 1995, V40, P1391 HCAPLUS
(9) Takatsuto, S; Agric Biol Chem 1989, V53, P259 HCAPLUS
(10) Takatsuto, S; Agric Biol Chem 1989, V53, P3363 HCAPLUS
(11) Takatsuto, S; J Chromatogr A 1994, V658, P3 HCAPLUS
IT **57-88-5P**, Cholesterol, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(phytosterols in the pollen of Robinia pseudo-acacia L.)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

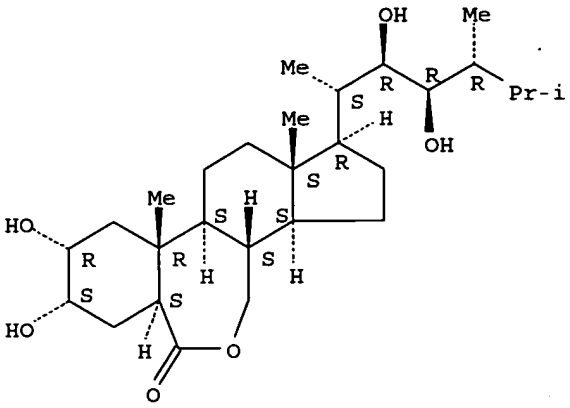
Absolute stereochemistry.



L41 ANSWER 20 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1997:84705 HCAPLUS
DN 126:248855
ED Entered STN: 05 Feb 1997
TI 24-**Epibrassinolide** from Gypsophila perfoliata
AU Schmidt, Juergen; Boehme, Frank; Adam, Guenter
CS Institut Pflanzenbiochemie, Halle/Saale, D-06120, Germany
SO Zeitschrift fuer Naturforschung, C: Biosciences (1996), 51(11/12), 897-899
CODEN: ZNCBDA; ISSN: 0341-0382
PB Verlag der Zeitschrift fuer Naturforschung
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
AB The scarce 24-**epibrassinolide** was identified from seeds of Gypsophila perfoliata by GC/MS as the only **brassinosteroid** present. The Δ7-phytosterols ergost-7-en-3β-ol, spinasterol, and 22-dihydrospinasterol were found as main sterols in the same plant material.
ST Gypsophila **epibrassinolide brassinosteroid** phytosterol spinasterol ergostenol
IT Gypsophila perfoliata
(**brassinosteroid** and sterols from Gypsophila perfoliata)
IT Sterols
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(**brassinosteroid** and sterols from Gypsophila perfoliata)
IT **78821-43-9**, 24-**Epibrassinolide**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(**brassinosteroid** and sterols from Gypsophila perfoliata)
IT **57-88-5P**, Cholesterol, biological studies 481-18-5P, Spinasterol 521-03-9P 17608-76-3P, Ergosta-7,22-dien-3β-ol 26047-31-4P, Ergost-7-en-3β-ol
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(**brassinosteroid** and sterols from Gypsophila perfoliata)
IT **604-35-3P**, Cholesteryl acetate 4651-46-1P, Spinasteryl acetate 14473-77-9P 26159-59-1P, Ergost-7-en-3β-yl acetate 59042-25-0P, Ergosta-7,22-dien-3β-yl acetate
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**brassinosteroid** and sterols from Gypsophila perfoliata)
IT **78821-43-9**, 24-**Epibrassinolide**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(**brassinosteroid** and sterols from Gypsophila perfoliata)
RN 78821-43-9 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-,

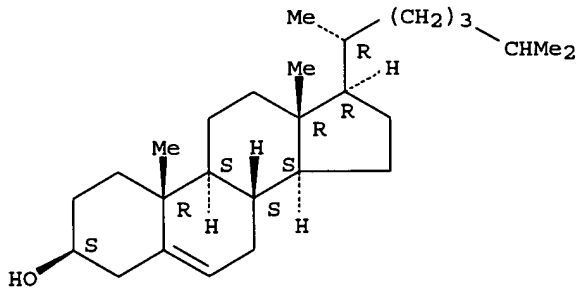
(1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



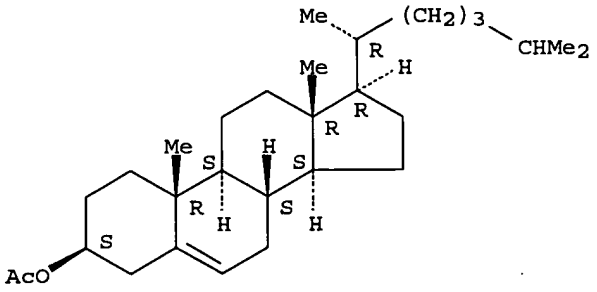
IT **57-88-5P**, Cholesterol, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(**brassinosteroid** and sterols from Gypsophila perfoliata)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



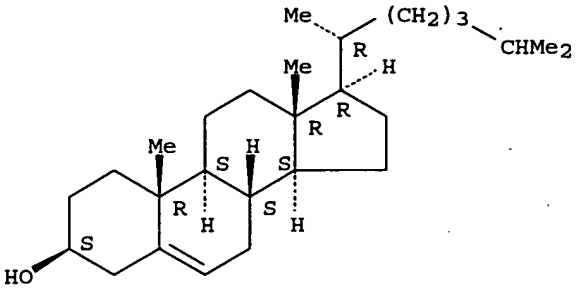
IT **604-35-3P**, Cholesteryl acetate
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**brassinosteroid** and sterols from Gypsophila perfoliata)
RN 604-35-3 HCAPLUS
CN Cholest-5-en-3-ol (3β)-, acetate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



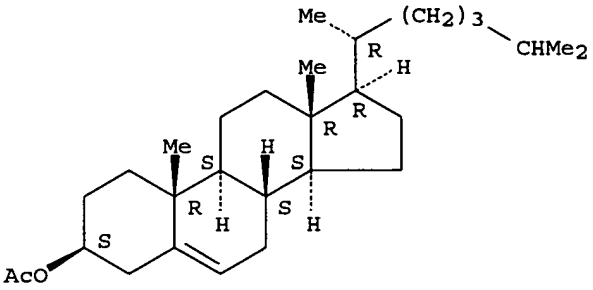
L41 ANSWER 21 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1994:478337 HCAPLUS
DN 121:78337
ED Entered STN: 20 Aug 1994
TI **Brassinosteroids** and sterols from seeds of Beta vulgaris
AU Schmidt, Juergen; Kuhnt, Christine; Adam, Guenter
CS Inst. Plant Biochem., Halle/Saale, D-06120, Germany
SO Phytochemistry (1994), 36(1), 175-7
CODEN: PYTCAS; ISSN: 0031-9422
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
Section cross-reference(s): 32
AB The **brassinosteroids** castasterone and 24-epi-castasterone were isolated from seeds of Beta vulgaris and identified by GC-MS anal. Furthermore, the triterpenoid and phytosterol constituents were determined by capillary GC and GC-MS.
ST **brassinosteroid** sterol triterpene Beta
IT Beet
(**brassinosteroids** and sterols from seed of)
IT Sitosterols
Triterpenes and Triterpenoids
RL: BIOL (Biological study)
(from Beta vulgaris seeds)
IT Plant hormones and regulators
RL: BIOL (Biological study)
(**brassinosteroids**, from Beta vulgaris seeds)
IT Steroids, biological studies
RL: BIOL (Biological study)
(hydroxy, from Beta vulgaris seeds)
IT **57-88-5**, Cholesterol, biological studies 83-48-7, Stigmasterol 111-02-4, Squalene 469-38-5, Cycloartenol 474-62-4, Campesterol 474-63-5, 24-Methylenecholesterol 481-18-5, Spinasterol 521-03-9, 22-Dihydrospinasterol 559-70-6, β-Amyrin 1449-09-8, 24-Methylenecycloartanol 23290-26-8, Avenasterol 26047-31-4, Ergost-7-en-3β-ol 72050-71-6 77794-81-1 80736-41-0, Castasterone 138126-65-5, Stigmastanol
RL: BIOL (Biological study)
(from Beta vulgaris seeds)
IT **604-35-3**, Cholesteryl acetate 915-05-9, Sitosteryl acetate 1259-10-5, Cycloartenyl acetate 1259-94-5, 24-Methylenecycloartanyl acetate 1616-93-9, β-Amyryl acetate 1900-53-4, Campesteryl acetate 2364-21-8, Stigmastanol acetate 4651-46-1, Spinasteryl acetate 4651-48-3, Stigmasteryl acetate 13000-50-5, 24-Methylenecholesterol acetate 14473-77-9, 22-Dihydrospinasterol acetate 23738-30-9, Avenasterol acetate 26159-59-1, Ergost-7-en-3β-yl acetate 64548-16-9
RL: BIOL (Biological study)
(mass spectral properties of)
IT **57-88-5**, Cholesterol, biological studies
RL: BIOL (Biological study)
(from Beta vulgaris seeds)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

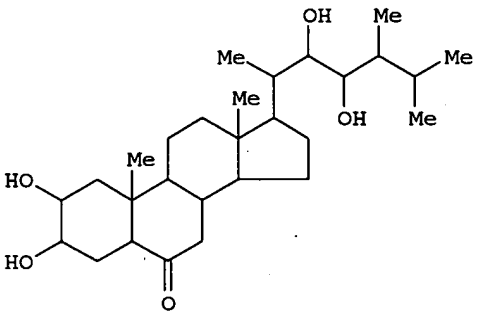


IT 604-35-3, Cholesteryl acetate
RL: BIOL (Biological study)
(mass spectral properties of)
RN 604-35-3 HCAPLUS
CN Cholest-5-en-3-ol (3β)-, acetate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



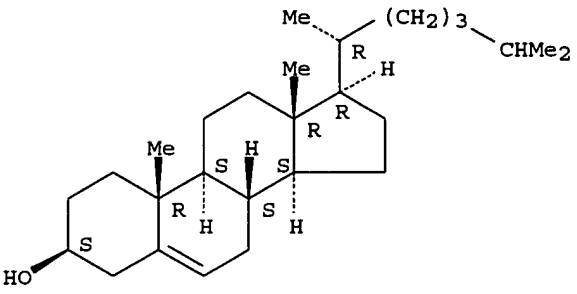
L41 ANSWER 22 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:24308 HCAPLUS
DN 114:24308
ED Entered STN: 26 Jan 1991
TI Synthesis of A/B rings in **brassinolide** analogs
AU Jiang, Yunbao; Xu, Zhiwen; Guo, Qizhen
CS Dep. Chem., Xiamen Univ., Xiamen, Peop. Rep. China
SO Xiamen Daxue Xuebao, Ziran Kexueban (1989), 28(3), 284-7
CODEN: HMHHAF; ISSN: 0438-0479
DT Journal
LA Chinese
CC 32-7 (Steroids)
OS CASREACT 114:24308
GI



II

AB The synthesis of A/B rings of **Brassinolide** analog was described. Taking cholesterol as starting material, nitration and reduction-hydrolysis as key steps, 3-hydroxy-6-cholesterone (I) was obtained in good yield. I was then sulfonylated and desulfonated by the usual ways to 2-steroidal alkene which was oxidized by OsO4 giving the target product 2α,3α-dihydroxy-6-cholesterone II with a total yield of 43.6%.
ST **brassinolide** analog hydroxycholesterone
IT **57-88-5**, Cholest-5-en-3-ol (3β)-, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(nitration of)
IT 3381-52-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and elimination reaction of)
IT 570-73-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and osmylation of)
IT 80-97-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and tosylation of)
IT 83456-38-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 120576-45-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, reduction and hydrolysis of)
IT **57-88-5**, Cholest-5-en-3-ol (3β)-, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(nitration of)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 23 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1989:209319 HCAPLUS
DN 110:209319
ED Entered STN: 10 Jun 1989
TI Analysis of phytosterols in the pollen of Vicia faba L. by gas chromatography-mass spectrometry
AU Takatsuto, Suguru; Omote, Kumiko
CS Dep. Chem., Joetsu Univ. Educ., Joetsu, 943, Japan
SO Agricultural and Biological Chemistry (1989), 53(1), 259-61
CODEN: ABCHA6; ISSN: 0002-1369
DT Journal
LA English
CC 11-1 (Plant Biochemistry)
Section cross-reference(s): 32
AB The sterol fraction of broad bean (V. faba) pollen included isofucosterol

37.2, 24-methylenecholesterol 24.7, 24-methylenecholestanol 15.8, sitosterol 8.8, 23-dehydrocampestanol 5.9, 23-dehydrocholesterol 1.9, 25--dehydrositostanol 1.7, 24-methyldesmosterol 0.8, cholesterol 0.6, and 24-ethyldesmosterol 0.5%. Biogenetic aspects and structural relationships between phytosterols and **brassinosteroids** are discussed.

ST Vicia pollen sterol compn; broad bean pollen sterol compn

IT Broad bean
(sterols of pollen of)

IT Pollen
(sterols of, of Vicia faba)

IT Steroids, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(hydroxy, of Vicia faba pollen)

IT **57-88-5**, Cholesterol, biological studies 83-46-5 474-63-5, 24-Methylenecholesterol 481-14-1, Isofucosterol 20780-41-0, 24-Methyldesmosterol 28949-66-8 39832-31-0, 24-Methylenecholestanol 58507-61-2, 23-Dehydrocholesterol 120462-05-7, 23-Dehydrocampestanol 120523-04-8
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(of Vicia faba pollen)

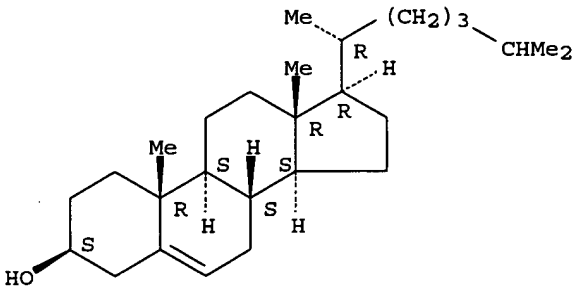
IT 1856-05-9P 2625-46-9P 22042-03-1P 22042-04-2P 66114-02-1P 120462-06-8P 120462-07-9P 120462-08-0P 120462-09-1P 120481-36-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT **57-88-5**, Cholesterol, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(of Vicia faba pollen)

RN 57-88-5 HCAPLUS

CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 24 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1989:24148 HCAPLUS

DN 110:24148

ED Entered STN: 21 Jan 1989

TI Studies on steroidal plant-growth regulators. Part 10. A new route for the efficient synthesis of the 2α,3α-dihydroxy-7-oxa-6-oxo-B-homo structural unit of **brassinolide**

AU Zhou, Wei Shan; Jiang, Biao; Pan, Xin Fu

CS Shanghai Inst. Org. Chem., Acad. Sin., Shanghai, Peop. Rep. China

SO Journal of the Chemical Society, Chemical Communications (**1988**), (12), 791-3
CODEN: JCCCAT; ISSN: 0022-4936

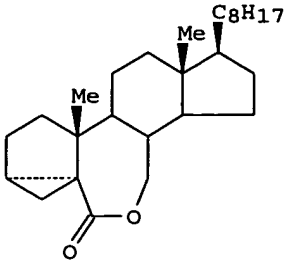
DT Journal

LA English

CC 32-7 (Steroids)

OS CASREACT 110:24148

GI



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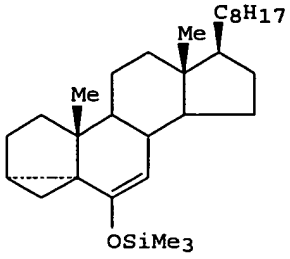


II

AB A process of regioselective preparation of homooxa steroids, e.g., I via ozonolysis of enol ethers, e.g., II, was described.

ST ozonolysis cholane cholestane enol ether; lactone cholane cholestane series

IT 86792-04-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(attempted preparation of)

IT 118121-16-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and attempted conversion to olefin)

IT 118121-15-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and borohydride reduction of)

IT 3839-09-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and conversion into silyl enol ether)

IT 1182-65-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and elimination-cyclization. of)

IT 465-54-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and oxidation of)

IT 110556-67-7P 118121-19-0P 118150-46-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and ozonolysis of)

IT 110556-68-8P 118121-14-5P 118121-17-8P 118121-18-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and periodate oxidation of)

IT 27607-77-8P, Trimethylsilyl trifluoromethanesulfonate 83462-94-6P
118121-20-3P 118121-21-4P 118121-22-5P 118121-23-6P 118121-24-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 2862-62-6 34186-19-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(silylation of)

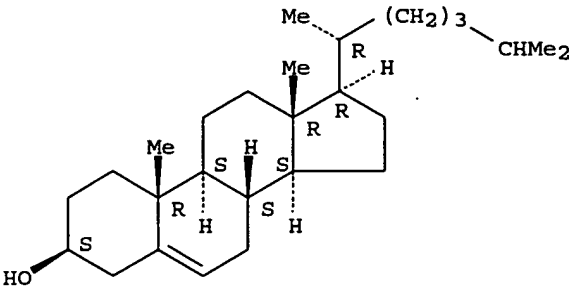
IT 57-88-5, Cholest-5-en-3-ol (3β)-, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(tosylation of)

IT 57-88-5, Cholest-5-en-3-ol (3β)-, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(tosylation of)

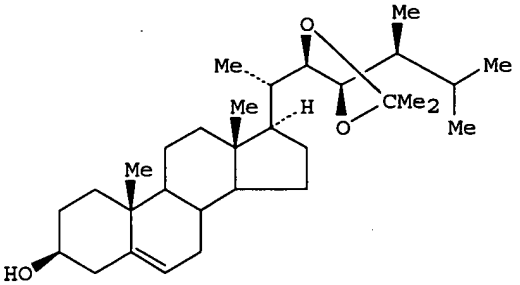
RN 57-88-5 HCAPLUS

CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

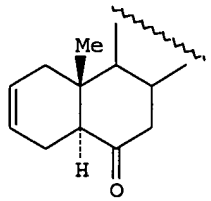
Absolute stereochemistry.



L41 ANSWER 25 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1988:6276 HCAPLUS
DN 108:6276
ED Entered STN: 09 Jan 1988
TI Synthesis of **brassinolide**. Part II. A simple synthesis of steroidal 3α,5-cyclo-6-ones and their efficient transformation to steroidal 2-en-6-ones
AU Aburatani, Masakazu; Takeuchi, Tadashi; Mori, Kenji
CS Res. Div., Fuji Chem. Ind., Ltd., Takaoka, 933, Japan
SO Synthesis (1987), (2), 181-3
CODEN: SYNTBF; ISSN: 0039-7881
DT Journal
LA English
CC 32-7 (Steroids)
OS CASREACT 108:6276
GI



I

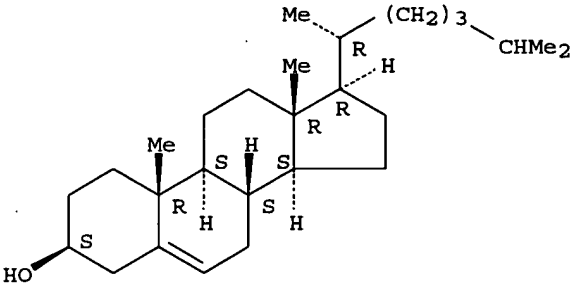


II

AB Sterols were converted to 3α,5-cyclo-6-ones via their mesylates and subsequent oxidation followed by refluxing with sodium bromide-p-toluenesulfonic acid in DMF to give steroidal 2-unsatd. 6-ones, e.g., ergostenol I was converted to ergostenone II, which is an important intermediate for **brassinolide**.
ST steroid cyclo ones; **brassinolide** intermediate
IT Steroids, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(2-unsatd., oxo, preparation of, from 3,5-cyclo derivs.)
IT Steroids, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(3,5-cyclo-, oxo, preparation and conversion of, to 2-unsatd. derivs.)
IT 57-88-5, reactions 83-48-7 474-67-9 83066-67-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(mesylation of)
IT 465-54-3P 2774-55-2P 58274-46-7P 106560-62-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and Jones oxidation of)

IT 3381-54-2P 15072-97-6P 83066-68-6P 92588-77-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and elimination-cyclization of)
IT 3152-46-3P 3839-09-6P 74174-49-5P 106560-63-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and rearrangement of)
IT 20281-69-0P 72050-68-1P 74174-45-1P 83066-71-1P 101046-86-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 57-88-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(mesylation of)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



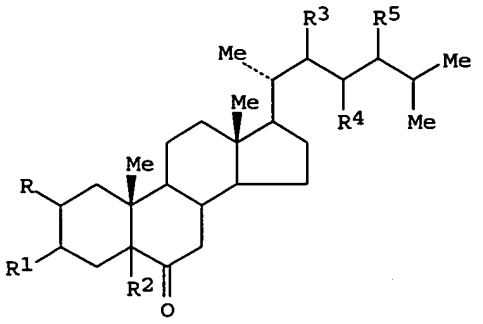
L41 ANSWER 26 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1987:617936 HCAPLUS
DN 107:217936
ED Entered STN: 12 Dec 1987
TI A process for the preparation of cholest-2-en-6-one, ergost-2,22-dien-6-one, and stigmast-2,22-dien-6-one as intermediates for plant growth hormone **Brassinolide**
IN Yuya, Masakazu; Takeuchi, Tei; Mori, Kenji
PA Fuji Chemicals Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07J009-00
ICA C07J053-00
CC 32-7 (Steroids)
Section cross-reference(s): 5
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 62099396	A2	19870508	JP 1985-237475	19851025 <--
PRAI JP 1985-237475		19851025 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 62099396	ICM	C07J009-00
	ICA	C07J053-00

GI



I

AB Title compds. I (RR1 = bond; R2 = H; R3,R4 = H, or R3R4 = bond; R5 = H, Me, Et) (II), useful as intermediates for plant growth hormone **brassinolide** (no data), are prepared A mixture of 5.0 mmol (22E,24S)-I (R = H; R1R2 = α-bond; R3R4 = bond R5 = Et) (preparation given) and 6 mmol 47% HBr in 20 mL MeCOEt was refluxed for 2 h to give 92% (22E,24S)-3β-I (R = R2 = H; R1 = Br; R3R4 = bond; R5 = Et), which (2 mmol) in 8 mL DMF was refluxed for 3 h to afford 82% II (R = H, R1R2 = bond, R3R4 = bond; R5 = Et).

ST stigmastadienone ergostadienone cholestenone intermediate **brassinolide**; plant growth hormone intermediate steroid

IT Plant hormones and regulators
RL: RCT (Reactant); RACT (Reactant or reagent)
(**brassinolide**, intermediates for, stigmastadienone and ergostadienone and cholestenone as)

IT **57-88-5**, Cholesterol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(mesylation and Jones oxidation of, cyclocholestanone from)

IT 474-67-9, Brassicasterol
RL: RCT (Reactant); RACT (Reactant or reagent)
(mesylation and Jones oxidation of, cycloergostenone from)

IT 83-48-7, Stigmasterol
RL: RCT (Reactant); RACT (Reactant or reagent)
(mesylation and Jones oxidation of, cyclostigmastenone from)

IT 92804-65-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and dehydrobromination of, stigmastadienone from)

IT 3152-46-3P 3839-09-6P 74174-49-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and isomerization of, in presence of hydrobromic acid)

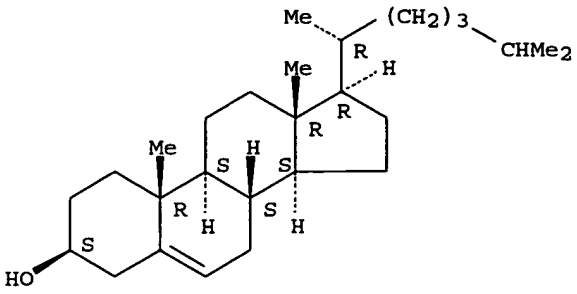
IT 20281-69-0P 72050-68-1P 74174-45-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate for **brassinolides**)

IT **57-88-5**, Cholesterol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(mesylation and Jones oxidation of, cyclocholestanone from)

RN 57-88-5 HCAPLUS

CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

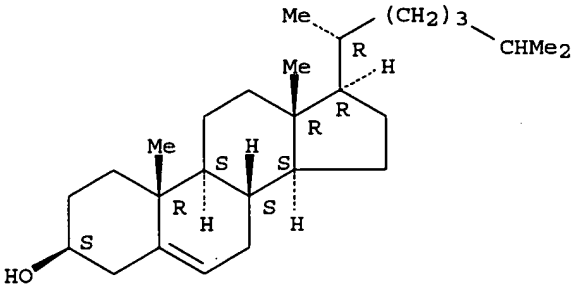
Absolute stereochemistry.



L41 ANSWER 27 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1987:81674 HCAPLUS
DN 106:81674
ED Entered STN: 21 Mar 1987
TI Effects of compactin, a 3-hydroxy-3-methylglutaryl coenzyme and reductase inhibitor, on the growth of alfalfa (Medicago sativa) seedlings and the rhizogenesis of pepper (Capsicum annuum) explants
AU Hata, S.; Takagishi; Egawa, Y.; Ota, Y.
CS Natl. Inst. Agrobiol. Resour., Yatabe, Japan
SO Plant Growth Regulation (1986), 4(4), 335-46
CODEN: PGRED3; ISSN: 0167-6903
DT Journal
LA English
CC 11-3 (Plant Biochemistry)
AB The effects of compactin, a specific inhibitor of 3-hydroxy-3-methylglutaryl CoA reductase, on the growth of alfalfa seedlings in vivo and the rhizogenesis of pepper explants in vitro were investigated. Compactin added to the agar medium inhibited the elongation of roots and hypocotyls of etiolated alfalfa seedlings. The growth inhibition was accompanied by strict inhibition of sterol synthesis. Addition of mevalonic acid, the direct product of 3-hydroxy-3-methylglutaryl CoA reductase, together with compactin relieved the growth inhibition. The sterol level in the seedlings was also protected against the lowering effect of compactin. Similarly, the rhizogenetic process of cultured explants of pepper was inhibited by compactin and relieved by mevalonic acid. Several isoprenoid end products were tested in combination with compactin to determine which compds., if any, might be limiting for growth. Exogenously supplied isoprenoids failed to relieve the growth inhibition of seedlings. In contrast, they partly relieved the growth inhibition of explants, suggesting their important role in plant growth. During the course of these expts., it was also found that **brassinolide** caused remarkable growth inhibition and twisting of alfalfa seedlings.
ST growth plant compactin mevalonate; alfalfa growth compactin mevalonate; pepper root growth compactin mevalonate; isoprenoid plant growth; **brassinolide** plant growth
IT Plant tissue culture
(callus formation in, compactin inhibition of, in pepper)
IT Plant tissue culture
(callus, root initiation in, compactin inhibition of, in pepper)
IT Plant growth and development
(compactin effect on)
IT Alfalfa
Capsicum annuum
(compactin effect on growth of)
IT Morphogenesis
(in callus cultures, compactin inhibition of, in pepper)
IT Root
(initiation of, in callus cultures, compactin inhibition of, in pepper)
IT Plant hormones and regulators
RL: BIOL (Biological study)
(growth inhibitors, **brassinolide** as)

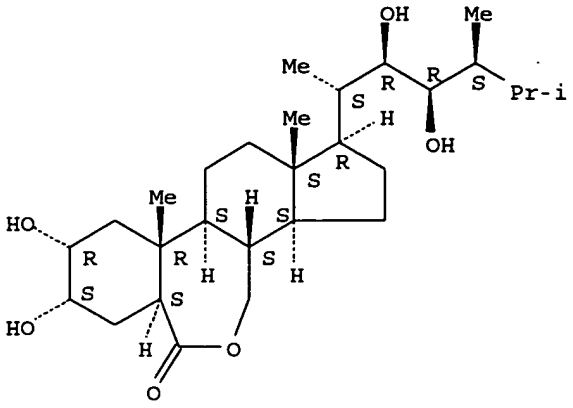
IT Steroids, biological studies
RL: FORM (Formation, nonpreparative)
(hydroxy, formation of, compactin inhibition of, plant growth in relation to)
IT Plant growth and development
(rooting, in callus cultures, compactin inhibition of, in pepper)
IT 73573-88-3, Compactin
RL: BIOL (Biological study)
(alfalfa and pepper growth response to)
IT 57-88-5, Cholesterol, biological studies 77-06-5, Gibberellic acid 1637-39-4, Zeatin 21293-29-8
RL: BIOL (Biological study)
(compactin inhibition of plant growth response to)
IT 150-97-0, Mevalonic acid
RL: BIOL (Biological study)
(compactin inhibition of plant growth reversal by)
IT 9028-35-7, 3-Hydroxy-3-methylglutaryl coenzyme A reductase
RL: BIOL (Biological study)
(in alfalfa and pepper growth, compactin in relation to)
IT **72962-43-7, Brassinolide**
RL: BIOL (Biological study)
(plant growth inhibition by)
IT 57-88-5, Cholesterol, biological studies
RL: BIOL (Biological study)
(compactin inhibition of plant growth response to)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **72962-43-7, Brassinolide**
RL: BIOL (Biological study)
(plant growth inhibition by)
RN 72962-43-7 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 28 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1986:553400 HCAPLUS
DN 105:153400
ED Entered STN: 01 Nov 1986
TI Steroids
IN Yuya, Masakazu; Takeuchi, Tei; Mori, Kenji
PA Fuji Pharmaceutical Industries Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07J009-00
CC 32-7 (Steroids)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 61069790	A2	19860410	JP 1984-191455	19840914 <--
PRAI JP 1984-191455		19840914 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 61069790	ICM	C07J009-00

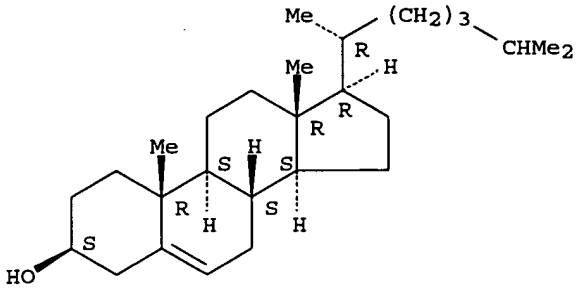
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Steroids I (R = H, Me, Et), useful as intermediates for **brassinolide**, were prepared by treating II (R1 = MeSO2, MeC6H4SO2) with a base in water-containing MeCOEt, then oxidizing the resulting III in MeCOEt, then heating the resulting IV using an acid or an organic halide as a catalyst in a solvent. Thus, stigmasterol was treated with MeSO2Cl in MeCOEt in the presence of Et3N, then water and KHCO3 were added and refluxed for 5 h, then oxidized by Jones reagent to give V, which was refluxed with p-MeC6H4SO3H and LiBr for 2 h in DMF to give 59.8% I (R = Et, unsatd.).
ST steroid prepn **brassinolide** intermediate; oxidn hydroxysteroid; cholestadienone prepn **brassinolide** intermediate
IT Oxidation
(Jones, of hydroxysteroids)
IT **57-88-5**, reactions 474-67-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(mesylation and Jones oxidation of)
IT 124-63-0

RL: RCT (Reactant); RACT (Reactant or reagent)
(mesylation by, of stigmasterol)
IT 83-48-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(mesylation of)
IT 3152-46-3P 74174-49-5P 85075-96-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and isomerization of)
IT 72050-68-1P 74174-45-1P 83456-37-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediates for **brassinolide**)
IT 57-88-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(mesylation and Jones oxidation of)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

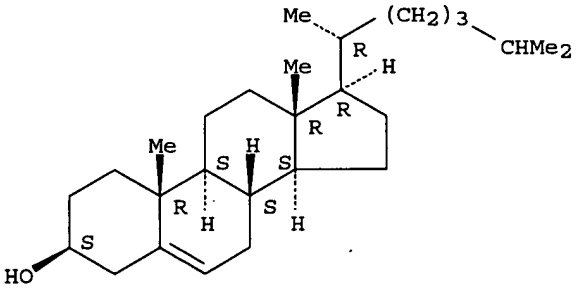
Absolute stereochemistry.



L41 ANSWER 29 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1985:451303 HCAPLUS
DN 103:51303
ED Entered STN: 24 Aug 1985
TI On the effects of cholesterol on hydrogen ion extrusion and on growth in maize root segments: comparison with **brassinosteroid**
AU Cerana, R.; Spelta, M.; Bonetti, A.; Lado, P.
CS Dip. Biol., Univ. Milano, Milan, I-20133, Italy
SO Plant Science (Shannon, Ireland) (1985), 38(2), 99-105
CODEN: PLSCE4; ISSN: 0168-9452
DT Journal
LA English
CC 11-3 (Plant Biochemistry)
AB Recent data show that **brassinosteroid** (BR) stimulates growth by cell enlargement and electrogenic H+ extrusion (H+ pump) in stems and roots, whereas 3 sterols (stigmasterol, ergosterol, cholesterol), present in higher plants, stimulate H+ extrusion but are ineffective on growth in maize root segments. The stimulating effect of cholesterol on H+ extrusion in maize root segments was characterized in comparison with that of BR. The results obtained show that cholesterol-induced H+ extrusion has the same characteristics as that of BR. It is dependent on K+ availability in the medium, on energy metabolism, and on protein synthesis and it is associated with a stimulation of K+ influx. Thus, the stimulation of H+ extrusion induced by cholesterol seems to depend on the activation of the H+ pump as it has been shown for BR. The lack of a stimulating effect of cholesterol on growth was investigated by studying the effect of the sterol on the intracellular osmotic pressure (OP) and on fusicoccin (FC)- or acid-induced growth. Cholesterol does not reduce the concentration of osmotically-active solutes in the cell sap and does not inhibit the stimulation of growth by FC or by acid buffer. Thus, the possibility that the lack of a promoting effect of cholesterol on growth depends on an inhibition of water uptake seems unlikely.

ST corn growth cholesterol **brassinosteroid**; proton extrusion corn growth cholesterol
IT Plant growth and development
(by corn root tissue, cholesterol effect on)
IT Corn
(hydrogen ion extrusion and growth of root tissue of, cholesterol effect on, **brassinosteroid** in relation to)
IT Root
(hydrogen ion extrusion and growth of, of corn, cholesterol effect on, **brassinosteroid** in relation to)
IT Osmotic pressure
(in corn root tisse, cholesterol effect on)
IT 12408-02-5, biological studies
RL: BIOL (Biological study)
(extrusion of, in corn roots, cholesterol and root growth in relation to)
IT 20108-30-9
RL: BIOL (Biological study)
(growth stimulation by, in corn root, cholesterol in relation to)
IT **57-88-5**, biological studies
RL: BIOL (Biological study)
(hydrogen ion extrusion and growth by corn root tissue response to)
IT **57-88-5**, biological studies
RL: BIOL (Biological study)
(hydrogen ion extrusion and growth by corn root tissue response to)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 30 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1985:451247 HCAPLUS
DN 103:51247
ED Entered STN: 24 Aug 1985
TI Relationship of steroidal structure to ethylene production by etiolated mung bean segments
AU Arteca, Richard N.; Bachman, Jeannette M.; Yopp, John H.; Mandava, N. Bhushan
CS Dep. Hortic., Pennsylvania State Univ., University Park, PA, 16802, USA
SO Physiologia Plantarum (**1985**), 64(1), 13-16
CODEN: PHPLAI; ISSN: 0031-9317
DT Journal
LA English
CC 11-2 (Plant Biochemistry)
AB Several **brassinosteroid** (BR) analogs and cholesterol and aldosterone were evaluated for their effectiveness alone and in combination with indole-3-acetic acid (IAA) in stimulating ethylene production by etiolated mung bean (Vigna radiata cv Berken) hypocotyl segments. Changing the conformation of the 2 hydroxyl groups on C-22 and C-23 positions from α to β did not greatly reduce the efficiency of these compds. to stimulate ethylene production alone or in combination with IAA. There was little difference in activity observed when the conformation

of the Me group in the C-24 position was changed from α to β. However, when hydroxyls were deleted from the side chain in the C-22 and C-23 positions, the compound was rendered inactive alone or in combination with IAA. The compound was also inactivated by removing the 7-oxa function on the B-ring and by substituting an Et group for the Me group in the C-24 position. Both aldosterone and cholesterol were ineffective in promoting ethylene production Thus, very stringent structural features are required for a steroid to have BR-like activity and to act synergistically with auxin in the promotion of ethylene synthesis.

ST ethylene Vigna steroid structure; **brassinosteroid** mung bean ethylene

IT Vigna radiata
(ethylene formation in, **brassinosteroid** and steroid structures effect on)

IT Plant hormones and regulators
RL: BIOL (Biological study)
(**brassinosteroids**, ethylene formation response to, in mung bean)

IT Molecular structure-biological activity relationship
(ethylene formation-stimulating, of **brassinosteroids**)

IT 87-51-4, biological studies
RL: BIOL (Biological study)
(ethylene formation in mung bean response to **brassinosteroids** and)

IT 52-39-1 **57-88-5**, biological studies **72962-43-7** **78821-42-8** **78821-43-9** 83456-53-5 83462-94-6 97387-92-3
RL: BIOL (Biological study)
(ethylene formation in mung bean segments response to)

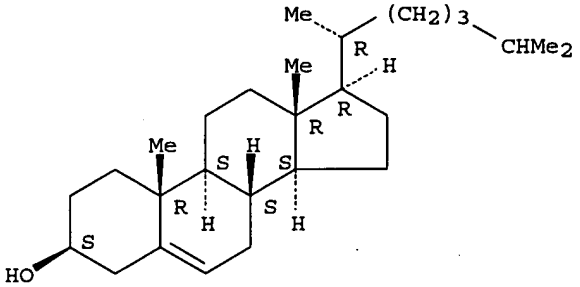
IT 74-85-1, biological studies
RL: FORM (Formation, nonpreparative)
(formation of, in mung bean, steroid promotion of, structure in relation to)

IT **57-88-5**, biological studies **72962-43-7** **78821-42-8** **78821-43-9**
RL: BIOL (Biological study)
(ethylene formation in mung bean segments response to)

RN 57-88-5 HCAPLUS

CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

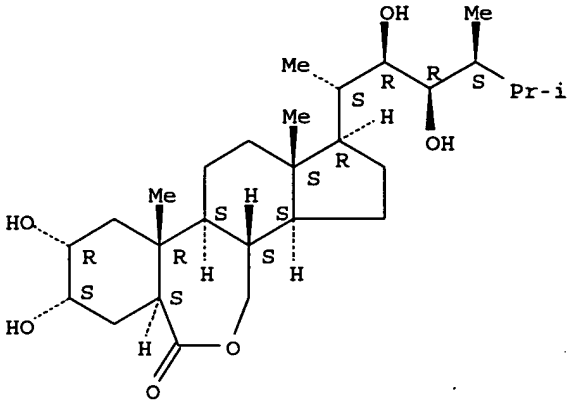
Absolute stereochemistry.



RN 72962-43-7 HCAPLUS

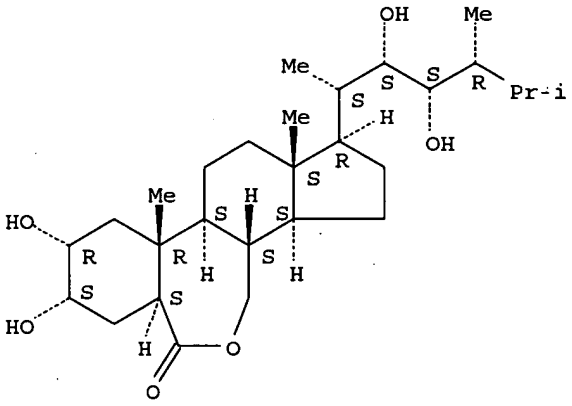
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4S)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



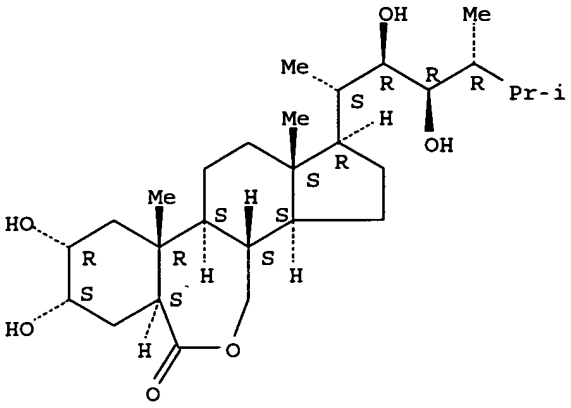
RN 78821-42-8 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2S,3S,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 78821-43-9 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2R,3R,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 31 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1984:436008 HCAPLUS
DN 101:36008
ED Entered STN: 04 Aug 1984
TI Regulating effects of **brassinosteroids** and of sterols on growth and proton secretion in maize roots
AU Cerana, Raffaella; Lado, Piera; Anastasia, Mario; Ciuffreda, Pierangela; Allevi, Piero
CS Dip. Biol., Univ. Milano, Milan, I-20133, Italy
SO Zeitschrift fuer Pflanzenphysiologie (**1984**), 114(3), 221-5
CODEN: ZSPPAD; ISSN: 0044-328X
DT Journal
LA English
CC 11-3 (Plant Biochemistry)
AB The effects of **brassinosteroid**, 12 related sterols, and 3 sterols on maize root growth and H+ secretion were investigated. A number of steroids stimulated root segment elongation and H+ secretion as **brassinosteroid** does. Defined structural requirements were found for the effect on growth; in contrast, all of the steroids tested, among which were stigmasterol, cholesterol and ergosterol, were active on H+ secretion. Cholesterol stimulated K+ uptake and dark CO2 fixation, 2 processes generally associated with the activity of the H+ pump.
ST root proton growth **brassinosteroid** sterol
IT Corn
(growth and hydrogen ion secretion by roots of, **brassinosteroids** and sterols effect on)
IT Root
(growth and hydrogen ion secretion by, of corn, **brassinosteroids** and sterols effect on)
IT Biological transport
(hydrogen ion secretion in, in corn, **brassinosteroids** and sterols effect on)
IT Root absorption
(of potassium, **brassinosteroid** and cholesterol effect on, in corn)
IT Plant hormones and regulators
RL: BIOL (Biological study)
(**brassinosteroids**, root growth and hydrogen ion secretion response to, in corn)
IT Steroids, biological studies
RL: BIOL (Biological study)
(hydroxy, root growth and hydrogen ion secretion response to, in corn)
IT Molecular structure-biological activity relationship
(root growth-stimulating, of **brassinosteroids** and sterols, hydrogen ion secretion in relation to)
IT 124-38-9, biological studies

RL: BIOL (Biological study)
(dark fixation of, by corn roots, **brassinosteroid** and cholesterol effect on)

IT 57-87-4 **57-88-5**, biological studies 83-48-7 3152-46-3
72050-69-2 72050-71-6 72075-01-5 74174-45-1 74174-49-5
78821-42-8 83509-42-6 83510-06-9 90965-37-0 90965-38-1
90965-39-2 90965-40-5
RL: BIOL (Biological study)
(root growth and hydrogen ion secretion response to, in corn)

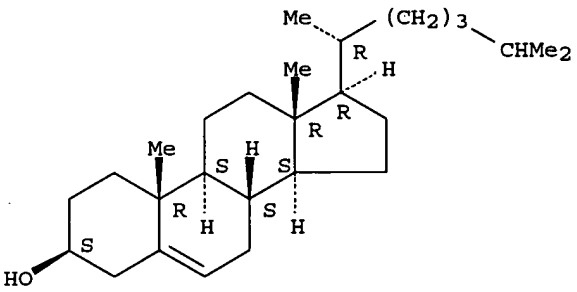
IT 12408-02-5, biological studies
RL: BIOL (Biological study)
(secretion of, by corn roots, **brassinosteroids** and sterols effect on)

IT 7440-09-7, biological studies
RL: BIOL (Biological study)
(transport of, in corn tissue, **brassinosteroid** and cholesterol effect on)

IT **57-88-5**, biological studies **78821-42-8**
RL: BIOL (Biological study)
(root growth and hydrogen ion secretion response to, in corn)

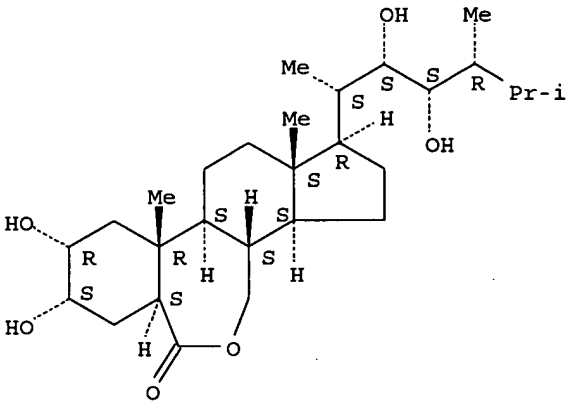
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



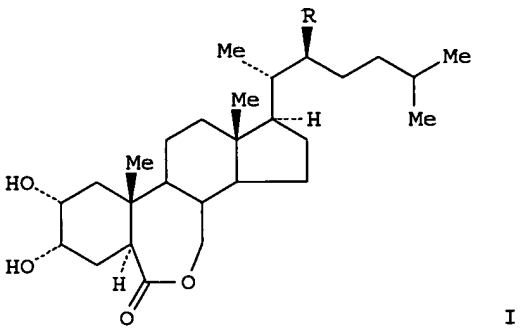
RN 78821-42-8 HCAPLUS
CN 6H-Benz[c]indeno[5,4-e]oxepin-6-one, 1-[(1S,2S,3S,4R)-2,3-dihydroxy-1,4,5-trimethylhexyl]hexadecahydro-8,9-dihydroxy-10a,12a-dimethyl-, (1R,3aS,3bS,6aS,8S,9R,10aR,10bS,12aS)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

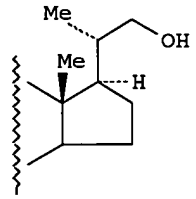


L41 ANSWER 32 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1983:198578 HCAPLUS

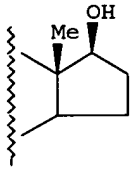
DN 98:198578
ED Entered STN: 12 May 1984
TI **Brassinolide** and its analogs. Part IV. Synthesis of **brassinolide** analogs with or without the steroidal side chain
AU Kondo, Michitada; Mori, Kenji
CS Dep. Agric. Chem., Univ. Tokyo, Tokyo, 113, Japan
SO Agricultural and Biological Chemistry (1983), 47(1), 97-102
CODEN: ABCHA6; ISSN: 0002-1369
DT Journal
LA English
CC 32-7 (Steroids)
Section cross-reference(s): 5, 11
GI



I



II

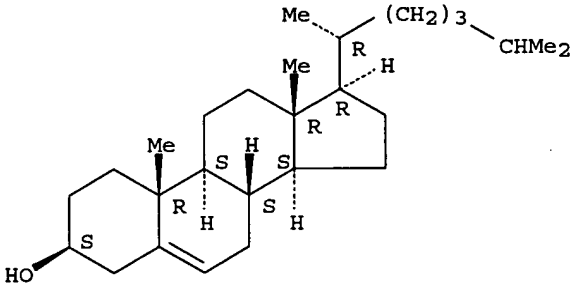


III

AB Four **brassinolide** analogs I (R = H, HO), II, and III were prepared from cholesterol, stigmasterol or pregnenolone. III was only 0.001% as active as **brassinolide** upon lamina-inclination testing with rice seedlings, while I and II were 1 .apprx.2% as active as **brassinolide**. This indicates the indispensable role of the side chain for the plant growth-promoting activity of brassino-steroids.
ST **brassinolide** side chain analog; plant growth promoter **brassinolide** analog
IT Plant hormones and regulators
RL: RCT (Reactant); RACT (Reactant or reagent)
(**brassinolide** side-chain analogs)
IT Molecular structure-biological activity relationship
(plant-growth regulation, activity of **brassinolides** without the side chain)
IT Steroids, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, of **brassinolide** side-chain analogs)
IT 81481-15-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(Grignard reaction and reduction of)
IT 107-82-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(Grignard reaction of, with pregnanecarboxaldehyde derivative)
IT 6885-40-1
RL: RCT (Reactant); RACT (Reactant or reagent)

(cyclization of)
IT 57-88-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclization-rearrangement of)
IT 83456-42-2P 85764-14-3P 85764-19-8P 85782-45-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and Baeyer-Villiger oxidation of)
IT 83456-38-6P 85764-16-5P 85764-18-7P 85782-43-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and acetylation of)
IT 83456-48-8P 85764-15-4P 85764-17-6P 85764-20-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and deacetylation of)
IT 85782-42-9P 85782-44-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)
IT 20281-69-0P 24336-03-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydroxylation of)
IT 465-54-3P 15387-47-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and oxidation of)
IT 83462-94-6P 85782-39-4P 85782-40-7P 85782-41-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and plant growth promoting activity of)
IT 1757-66-0P 3839-09-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and rearrangement of)
IT 57-88-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclization-rearrangement of)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L41 ANSWER 33 OF 33 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1949:8406 HCAPLUS
DN 43:8406
OREF 43:1789a-i,1790a-c
ED Entered STN: 22 Apr 2001
TI β-Norcholesterol
AU Sorm, F.; Dykova, H.
SO Collection of Czechoslovak Chemical Communications (1948), 13, 407-19

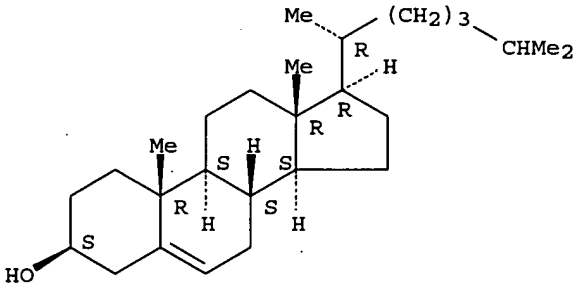
Search done by Noble Jarrell

CODEN: CCCCAK; ISSN: 0010-0765
DT Journal
LA English
CC 10 (Organic Chemistry)
GI For diagram(s), see printed CA Issue.
AB The principal reaction product (I) from the Cr2O3-oxidation of cholesterol acetate (Collection Czechoslav. Chemical Communs. 12, 437(1947)), was used for the preparation of β-norcholesterol (II), an analog of cholesterol with a 5-membered B ring. A white needlelike enol lactone (III) with a 7-membered ring, m. 122° (from MeOH), [α]20D 60° (c 2, CHCl3), was obtained in either 1-g. yield (52%) after refluxing 2 g. I in 30 cc. Ac2O on a water bath 1 hr., removing Ac2O, separating the noncryst. residue on Al2O3 by chromatography, and recrystg. the petr. ether eluate from MeOH, or in 6-g. yield (63.4%) by treating 10 g. I in 20 cc. dry pyridine with 8.8 g. BzCl at room temperature 72 hrs. and purifying the Et2O extract of the reaction mixture III (4 g.) heated in a test tube on an oil bath 30 min. at 180-200° evolved CO2 and formed 91.4% β-norcholesterol acetate (IV), m. 78° (from Me2CO), [α]20D -89° (c 2, CHCl3). II, fine white needles from absolute MeOH, EtOH, or petr. ether or a voluminous powder from aqueous EtOH, m. 114°, [α]20D -90°, was obtained in 96.3% yield by refluxing 3.00 g. IV in 800 cc. boiling MeOH with a saturated aqueous solution of KOH (5 g.) on a water bath 2 hrs. and purifying the product by removing the MeOH, taking up the residue in Et2O, washing it until neutral, drying it with Na2SO4, distilling off the Et2O, and recrystg. II was identified as its benzoate (V) (200 mg.), fine white crystals, m. 136° (from EtOH and Me2CO), [α]20D -54° (c 4, CHCl3), resulting from the reaction of 200 mg. of II in dry pyridine with BzCl at room temperature for 72 hrs., and as its sulfurous acid ester (VI), white crystals from petr. ether, m. 168°, [α]20D -52.8° (c 3.33, CHCl3), resulting from the reaction of 500 mg. II with 5 times the theoretical amount (775 mg.) of SOCl2 at room temperature for 30 min., followed by removal of the excess SOCl2 with H2O and purification of the product. II (1 g.) in 10 cc. dry C6H6 and 7.5 cc. dry Me2CO was converted into β-norcholestenone (VII) by the oxidation method of Oppenauer by treating it with 800 mg. of (Me3CO)3Al in 5 cc. dry C6H6 at 75-85° 6 hrs. VII was isolated as its semicarbazone, m. 251°. The ultraviolet absorption of VII showed it was α,β-unsatd. Expts. to definitely establish the structure of II included the mode of formation and the structure of III, as well as proof of the structure of IV. The inability to titrate III with NaOH; the absence of a CO2H group in III as shown by potentiometric titration; a quant. recovery of the Me ester of I, m. 79°, from the reaction mixture of 300 mg. of that substance and 200 mg. BzCl instead of recovery of III; and the failure of III to form an ester with CH2N2 all indicated that the CO and CO2H groups of I were involved in the formation of III. The assumed enol lactone structure of III seemed reasonable since its ultraviolet absorption spectrum approached that of CH2:CHOAc and not of CH2:CHCO2H, even though its splitting off of CO2 to form IV was unusual. Analysis of IV showed the AcO group in ring A was maintained; and the neg. rotation of IV, in agreement with the characteristic rotational changes in cholesterol-type compds. as opposed to the pos. rotation of I and III, showed ring B was closed. Four lines of evidence are given to show the presence of only 1 double bond in IV: (1) absorption of 9.18 cc. H2 (9.28 cc., theoretical) at 0°, 760 mm., to form dihydro-β-norcholesterol acetate (VIII) from 166.5 mg. IV added to prehydrogenated catalyst (100 mg. PtO2 in glacial HOAc); (2) formation of 93% (2 g.) β-norcholesterol acetate oxide (IX) (from MeOH), m. 108°, [α]20D -34° (c 2, CHCl3), by the reaction of 2.072 g. IV and 50 cc. 0.4 N (100% excess) perphthalic acid at room temperature for 72 hrs., followed by titration of the reaction mixture with 99.3 cc. 0.1 N Na2S2O3 (100 cc., theoretical); (3) absorption by IV of an amount of Br2 in Et2O and glacial HOAc corresponding to 1 double bond; and (4) formation of the crystalline HCl addition product of IV, m. 80° (mixed m.p. with IV, 66°), by saturation of 2 cc. CHCl3 containing 414 mg. IV with gaseous HCl at 0°.
IT **5H-Benz[b]indeno[5,4-d]oxepin-5-one**

, 1-(1,5-dimethylhexyl)-1,2,3,3a,3b,4,8,9,10,10a,10b,11,12,12a-tetradecahydro-8-hydroxy-10a,12a-dimethyl-, acetate
Sulfurous acid, ester with β-norcholesterol
B-Nor-4-cholesten-3-one, semicarbazone
B-Norcholestan-3β-ol, acetate
B-Norcholestan-3β-ol, 5,7-epoxy-, acetate
β-Norcholesterol, 5,7-epoxy-, acetate
β-Norcholesterol, dihydro-, acetate

IT β-Norcholesterol
(and derivs.)
IT 8H-Cyclopent[a]oxireno[k]fluorene, tetradecahydro-
(derivs.)
IT 57-88-5, Cholesterol
(analog of, with five membered B-ring)
IT 6544-70-3, B-Nor-5(7)-cholesten-3β-ol
(and derivs.)
IT 81818-30-6, 4-Indanacetic acid, 1-(1,5-dimethylhexyl)hexahydro-5-(4-hydroxy-1-methyl-2-oxocyclohexyl)-7a-methyl-
(derivs.)
IT 2552-26-3, B-Nor-4-cholesten-3-one 14993-76-1, 4-Indanacetic acid, 5-(2,4-dihydroxy-1-methyl-2-cyclohexen-1 yl)-1-(1,5-dimethylhexyl)hexahydro-7a-methyl-, ε-lactone, acetate
(preparation of)
IT 217-04-9, Dicyclopenta[a,f]naphthalene
(steroid derivs.)
IT 57-88-5, Cholesterol
(analog of, with five membered B-ring)
RN 57-88-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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